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April 13, 14 and 15, 1944

DECEMBER, 1943

Vol. 26 . . . No. 12

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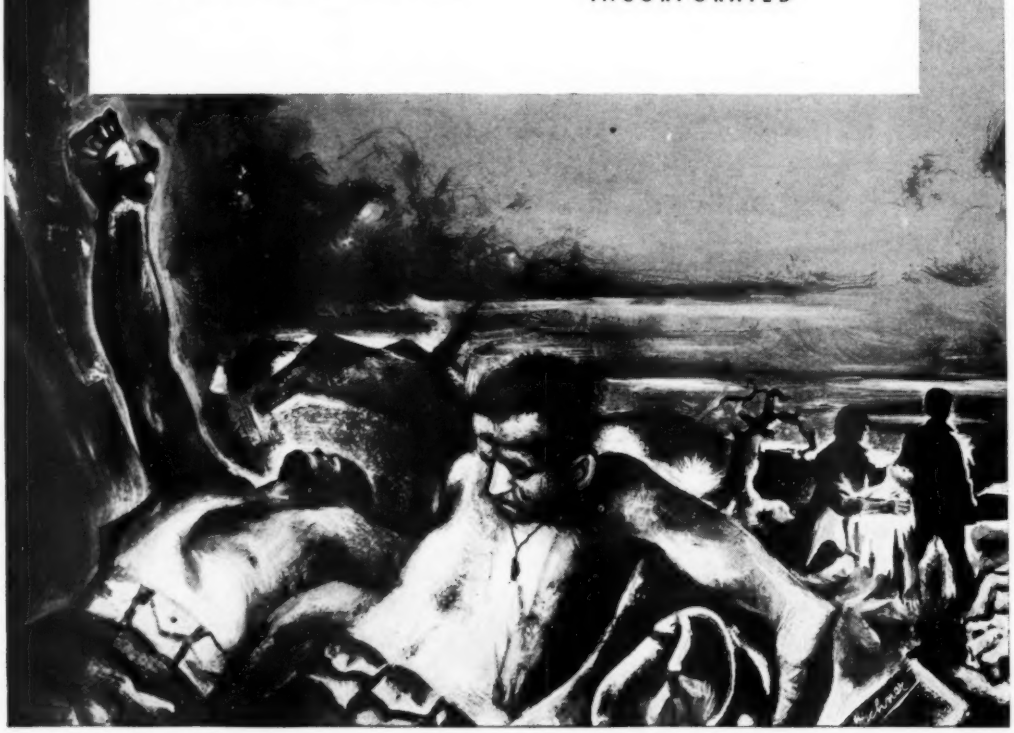

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 26 **December, 1943** **No. 12**

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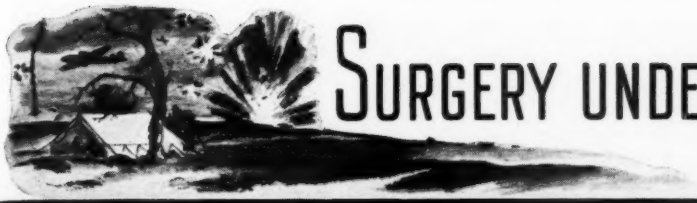

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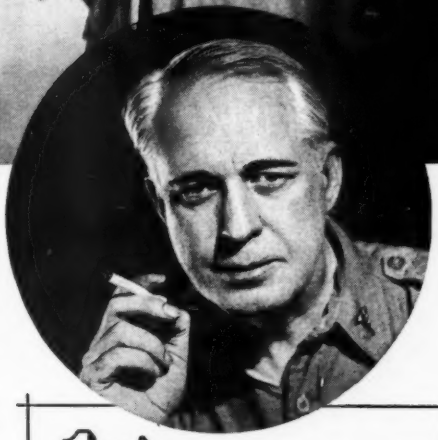

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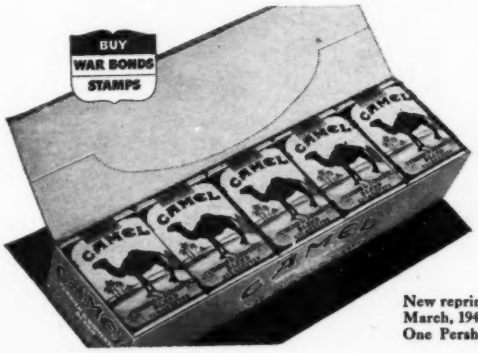

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New reprint available on cigarette research—Archives of Otolaryngology, March, 1943, pp. 404-410. Camel Cigarettes, Medical Relations Division, One Pershing Square, New York 17, N. Y.

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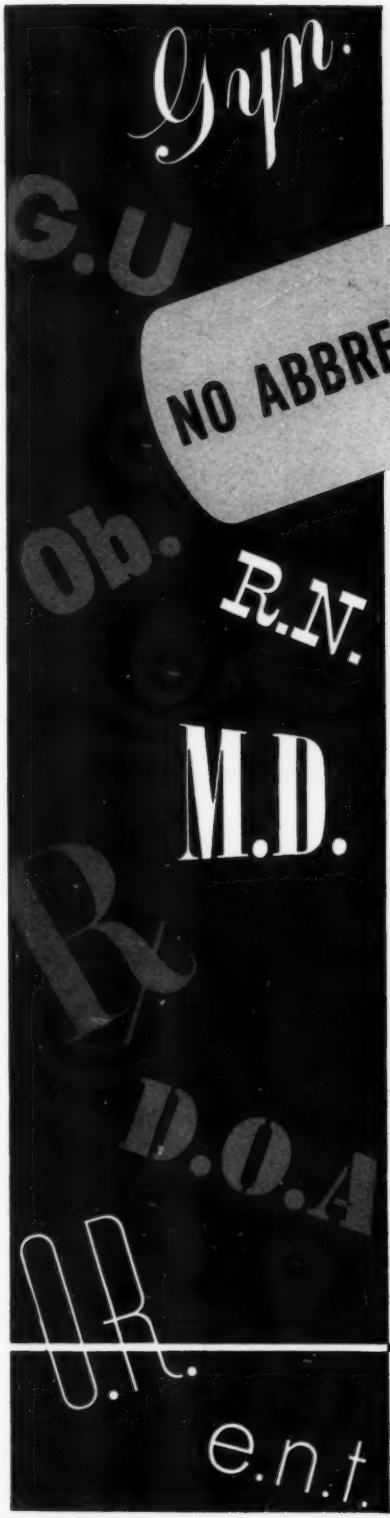

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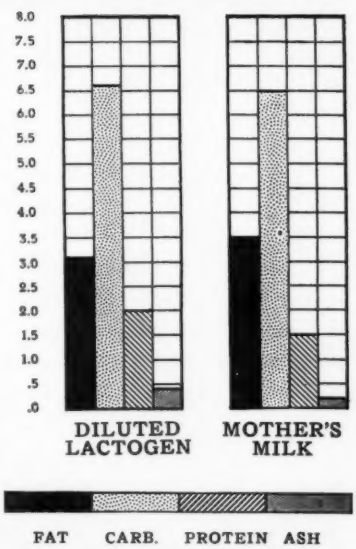

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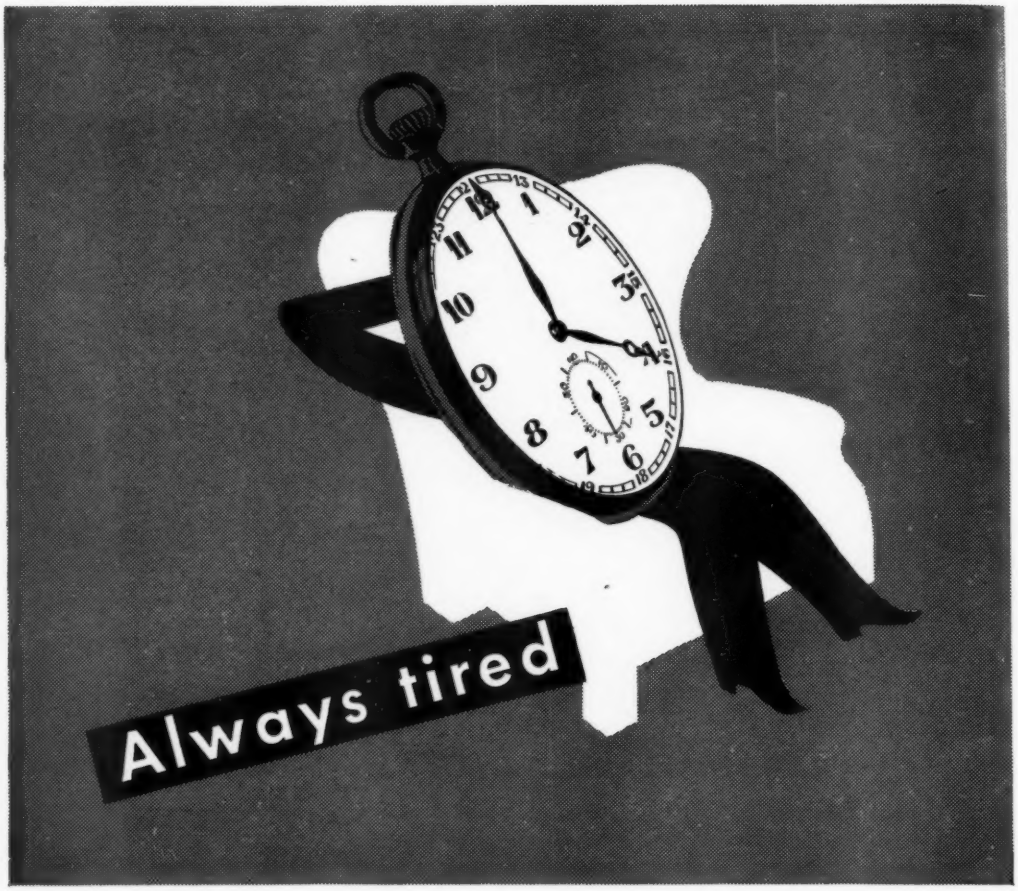

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Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 26 December, 1943 No. 12

FEEDING THE CHILD

R. E. NUTTING, M.D.
Duluth, Minnesota

THE fundamentals in the dietary management of the child during wartime are no different than at any other time. It is possible that the problem of obtaining the essential items may become more difficult as the war continues. It is noteworthy that the children of England and Scotland, where the food shortage has been acute, are said to be in a better state of nutrition today than before the war. Numerous ingenious devices have been employed by the people of France and other occupied countries to salvage every possible protective food substance, many of which were heretofore discarded as unfit for consumption. With our natural resources it is unlikely that we will face such limitations. Our problem is to make better use of the foodstuff at our disposal, by more intelligent selection and preparation of our food, and to become informed about optimal dietary requirements.

The nutritional requirements of the infant and child are fundamental to the pediatrician. Furthermore the diet of prospective mothers must give us concern for it has recently been demonstrated that the diet of mothers during the three to four months before term definitely affects the amount of breast milk, the ability of the mother to nurse, and the general well-being of the infant.

According to Jeans, vitamin C should probably be given to the infant earlier than is our present custom. Whether an infant is receiving breast milk or some form of cow's milk dilution makes no appreciable difference with regard to the need for additional supplement. This is especially true in the artificially fed infant where the blood levels of vitamin C fall into the prescorbutic zone by the tenth day. Twenty milligrams of ascorbic acid is found to be necessary to bring this up to normal and this makes it desirable that an infant of ten days or two weeks receive an ounce of orange juice daily and by the time he is three months of age, two ounces or more.

It is recommended that vitamin D be added to the infant's feeding some time during the second or third week of life. A concentrated preparation of D_2 or D_3 miscible with the formula or a few drops of oleum percomorphum obviates the possible danger of aspiration when the larger doses of plain cod liver oil are administered. This is especially true in the debilitated infant or in the extremely fussy infants who are apt to sputter a great deal when the oil is given. Plain cod liver oil is perfectly satisfactory a little later on. One-half teaspoonful of high potency cod liver oil or one teaspoon of the less potent cod liver oil yields approximately 400 units of vitamin D which is optimal. Excessively large doses may lead to anorexia.

There is no advantage gained in giving solid food earlier than the third month. It is customary to give any one of a number of cereals of good vitamin and mineral content. Sieved vegetables, egg yolk, and sieved fruit are added to the diet during the following two or three months. Shortly after this meat soups and certain starchy foods may be added. A diet of this type which includes

From the Department of Pediatrics, The Duluth Clinic, Duluth, Minnesota. Read at the annual meeting of the Minnesota State Medical Association, Minneapolis, Minnesota, May 19, 1943.

one and one-half pints of either breast milk or cow's milk supplies an adequate amount of calcium, protein and the necessary vitamins and minerals.

During the transition period from the infant to the more adult type of diet the relative caloric requirement becomes less. It is during this time, around the end of the first year, and during the next few years of life, that we so often encounter appetite disturbances. This is in no small measure contributed to by the fact that there is an insistence on the part of the parents to get the child to take certain quantities of food which are out of proportion to his daily needs at this time. It is during this age period that overindulgence in sweets is permitted to the exclusion of the more essential protein, mineral and vitamin containing foods.

Due to the inadequate amount of vitamin D in the food and insufficient sunshine, the addition of vitamin D to the diet is just as important for older children as it is during the first year of life. This is a fact that is probably overlooked by many in the dietary management of the older child. While it has been shown that vitamin D-irradiated milk will prevent moderate and severe rickets, it does not completely take the place of cod liver oil.

Ever since Casimir Funck coined the term vitamin, and reported on the etiology of the deficiency diseases in 1912, there has been an ever-increasing interest in these accessory food substances. During the past few years new discoveries, especially in the realm of the vitamin B complex, have created an unwarranted concern over possible avitaminosis, both in the mind of the physician and the public. This has led in many instances to irrational therapy, self-diagnosis, and the needless expenditure of vast sums of money.

About a year ago a report prepared by the Subcommittee on Medical Nutrition, National Research Council, set down a group of symptoms and physical signs to serve as a guide for the recognition of early deficiency states in infants, children and adults. Such symptoms as lack of appetite, failure to eat an adequate breakfast, aversion to normal play, poor sleeping habits, etc., along with physical signs such as lack of subcutaneous fat, poor muscular tone, rough skin and pallor, were catalogued indicating which of these might be recognized by the laity, the nurse or the doctor.

Other groups of scientists, research workers and nutritionists have suggested methods to determine sub-clinical nutritional disturbances. Nevertheless, there is still no adequate means of recognizing minimal nutritional deficiencies.

We do have, however, at our immediate disposal optimal dietary requirements. In attacking the problem of nutrition in the child from the standpoint of these requisites we will have a relatively simple and clear-cut program to improve the health of our children through better nutrition.

The daily dietary essentials for the child may be briefly listed as follows:

Milk—one pint to one quart
Lean meat—one serving
Eggs—one or two daily
Vegetables (green or yellow)—two liberal servings
Fruit—two servings—one raw, preferably citrous
Butter or oleomargarine with added vitamin A—one square
Cod liver oil—one teaspoon—or its equivalent in a vitamin D preparation
Additional foods to make up the necessary caloric intake—whole grain or enriched bread, cereal products, sugar or fats.
Iodized salt

Too much emphasis cannot be placed on the necessity of including each one of these items in the daily menu. We must come to take the attitude in our routine prescribing of diets similar to that we ordinarily take in prescribing a diet for the diabetic. If we will do this and adhere to a schedule that includes the items as listed, we will be doing our part in combating nutritional deficiency.

Our familiarity with these optimal dietary requirements is vital if we are to assume our rightful, and I might say dutiful, leadership in the field of nutrition. All too much of the nutritional information comes from sources other than the physician. Conflicting reports and improper emphasis on this or that diet factor has led to great confusion and bewilderment in the minds of the public, i.e., in the minds of our patients. We as physicians must not only enlighten our patients through our daily contacts but also must be willing and ready to serve for and with other agencies dealing with this nutritional problem.

PREPARING THE CHILD FOR SCHOOL

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WE all know stories of people who have said to each other, "Let's do this together, so that if it turns out wrong, neither of us will get the blame." Maybe they say to themselves, "If it turns out wrong, I'll let on she did it." Well, I seem to be the thing those two were conniving about. For I am a product of a medical education and lay experience; so both groups can disown me and my remarks and blame them on my association with the other, if they so choose.

In my nonprofessional experience of the past ten years, I have become interested in the health of the school child from the parent's point of view as well as from the physician's, and I have become especially interested in trying to lead the parent into an understanding of the essential health measures to follow in caring for his children.

On the other hand, from my professional contacts, I have been able to appreciate the reserves which bind the physician. Always in fear of being thought mercenary he has hesitated to urge too strongly upon parents the measures which he knows to be safeguards for a child's health. Let us think now of immunization programs, especially. The physician stands ready always to cooperate in widescale immunization, but the moment he urges such a program too forcefully upon his community, a clamor of his being mercenary is apt to arise. So he leaves it to the Board of Health to offer his services in such a plan and to lay groups to educate his community to the necessity for them.

The necessity for immunizing our soldiers seems self-evident. Here is a large group of men thrown together in close contact in army camps, so, of course, they must be protected in so far as possible from the readily contracted diseases which might quickly be passed from one to another. We cannot afford to have preventable diseases incapacitate our men. Next to the mobilization of men for the army the mobilization of children for school each fall is the greatest system we know for assembling groups of persons together in close contact. Why then is it not equally important to protect *them* from the readily contacted diseases which annually incapacitate them, sometimes maiming them for life? We cannot afford to have preventable diseases incapacitate our children. Let us take seriously this job of educating our fellowmen regarding immunization and the importance of maintaining close contact with the family physician.

Where shall our course of education start? There is much to be done and there are many groups working on different phases of parent education. We who are here today can take part in this education of parents in health matters.

The average infant has fairly good supervision during his first six months. I might add that this is due mainly to his own efforts, for if his food is in any way unsatisfactory, the noises he produces galvanize the family into action. Not so with the older child who, alas, "can take it." What a lot of wrecks of people we see who "took it" to the detriment of their physical well-being.

So we start at the age of six months when the well supervised child has started his immunization program. His first birthday should find him immunized against smallpox, diphtheria and whooping cough. The smallpox vaccination should be repeated at his sixth, twelfth and eighteenth years and again whenever an epidemic is present in his community. In this way he should *never* suffer any *severe* reactions and still should obtain complete immunity against smallpox, however closely he is exposed. We are all too prone as individuals to regard smallpox as a scourge of the past; let us hope that it is. It can be—and it will be—if we as a profession emphasize to parents and the public that smallpox is controlled only by vaccination.

There are states which have compulsory vaccination, there are others which control the disease through strenuous programs of public enlightenment, there are those which are indifferent to vaccination and some retarded ones like our own which actually have laws against compulsory vaccination. Examine the statistics of these States and you will have a very clear picture of the value of vaccination,—it is just what you would expect.

Read at the annual meeting of the Minnesota State Medical Association, Minneapolis, Minnesota, May 19, 1943.

In New Jersey with a population of over 4,000,000 there has not been a single case of smallpox since 1931. In Minnesota, we have had in half that period about 3,500 cases. In one year alone 1924-25 we had over 4,000 cases. That started a stampede for vaccinations so that subsequent years show a marked dropping off of cases. Let us hope that we do not have to have such a severe epidemic again to remind us of the importance of immunity.

As for diphtheria, the history of its control is a dramatic one. Before 1900 almost 60 per cent of children contracting diphtheria died of it. Then antitoxin was discovered and by the turn of the century the deaths from diphtheria had been cut in half. Subsequent to the widespread use of toxin-antitoxin the incidence of diphtheria, as well as deaths from it, dropped markedly, so that today death from diphtheria is exceptional. Unfortunately, though, Minnesota has not yet immunized enough of her children less than ten years old to insure the absence of outbreaks of diphtheria. It could be eliminated from child life entirely if all children were immunized before their first birthday. The physicians of the State and the State Board of Health stand ready at any time to help their communities organize and conduct immunization programs. Let those who are leaders in their communities initiate programs for immunization of children before their first year. Then at the pre-school age the Schick test should be used to check the presence of immunity in the presence of an epidemic.

It is not important for the lay leaders to give the parents more specific directions than these except to tell them to ask their doctors from time to time about new immunization methods or about additional immunization in case of contemplated travel.

The foundation for good health is laid down in the first six years of a child's life. So from immunization let us go on to other ways of building up the pre-school child's resistance against disease. Let us call parents' attention to other ways of making and keeping the child physically fit. All of us here know the things that are good for our children. Let us train ourselves in being prompt in doing for our children the things that we know to be good for them.

Dr. Nutting has told you about feeding the child. Remember also that the child must be well rested to get the most benefit from the food he eats. He must have plenty of rest, more, very often, than he wants. He should be well rested when he comes to the table, he should eat slowly and should enjoy his mealtime hour. Moreover he should have an early bedtime hour so that he wakens rested and refreshed in the morning. When I talk to Parent-Teacher groups I stress this matter of rest as the most important point in the prevention of illness; most children do not get enough rest,—neither do most adults. We are a nervous, high-strung, often irritable lot largely because we need more rest. That is unavoidable, perhaps, in these war years for us adults, but let's give the children, at least, their chance to grow normally. And let *us* take what relaxation we can.

Another point I stress in talking to parents is the vast good that would accrue to themselves, their children and their community if they would have the fortitude to keep the "three littles" home from school. These three littles are—the little cold, the little fever and the little upset stomach. Most parents do not appreciate their importance though they do realize when they stop to think about it that most serious diseases start from one or more of them. But they are influenced by the child, who does not want to miss a day of school or who has been sold on the idea of perfect attendance as an ideal achievement. As a matter of fact that aim has been the greatest epidemic spreader known to childhood. The movies are running it a close second, so I tell the parents that when they keep a child home from school with one of the "littles" they must also keep him in bed, or at least in the house 'till he is quite well. It is surprising how many parents do not wish to be bothered when a "little" something shows up.

I would like to call your attention to the blue poster here which says "Just by keeping well, you can help win this war." With one third of the doctors in the armed forces, the rest must be left free to take care of unavoidable illness and serious accidents. The more civilians one doctor can look after, the more doctors are freed for taking care of soldiers who need their help on the battlefield. The following simple health rules are listed: (1) eat right; (2) get your rest; (3) see your doctor once a year; (4) keep clean; and (5) play some each day.

The greatest preventative measures are known to be the simplest. The U. S. Federal printing

presses are working overtime trying to bring to the people this message of prevention. The President of the United States in his Child Health Day proclamation said in part: "I call upon the people in each of our communities to renew their efforts to promote the health of children in wartime. . . ."

The Minnesota Congress of Parents and Teachers is working as never before to bring this message to the people of our communities. My job as State Chairman of Health in the Minnesota Congress of Parents and Teachers is to encourage over seven hundred P.T.A. presidents to urge upon their association the pre-school health examination for every child entering school next fall. At this examination the immunization of the child is carried forward. For the well cared for child who was immunized as suggested earlier, this will be a second vaccination, a Shick test, or another course of diphtheria toxoid. But for the neglected child, this will be his first protection against smallpox and diphtheria, a protection which is doubly important now when the child will be thrown with so many youngsters of his own age.

In the typical pre-school health examination the child receives first a general inspection to check on his body build, overweight, underweight, posture, and so on. His eyes are checked for normal vision, his hearing is tested, his throat is inspected for diseased tonsils and adenoids, his lungs and heart are examined, his feet are inspected for "flatness" and he should have the Mantoux test to discover any possible tuberculosis contact, just to mention some of the more important things. Finally, his teeth are carefully checked and the parent advised about repairs. That much comprises the health examination.

It is always difficult for me to know whether I should stress one part of the pre-school health examination more than another. It is all so important. And still we have seen so much tragedy, unhappiness, and even delinquency resulting from undetected hearing and seeing defects that I am sometimes tempted to tell parents to ask their doctors to double-check on Johnny's eyes and ears.

The second part and that which logically follows the first, is the correction of any correctable defect or the treatment of any condition which according to the doctor's recommendation would benefit the child. These examinations of the child about to enter school for the first time should be repeated every two or three years and while the State Parent-Teacher program is not urging this as consistently, for want of time, as it is the pre-school examination, it should receive the same amount of publicity. Wherever you are located we would like to have you line up with the Summer Round-Up program of the State and National Congress affiliated schools. It is an educational program pure and simple, an effort to bring to parents a realization of the importance of putting their children in the best possible physical condition and keeping them so.

We hear on every side about the great numbers who have failed to pass Selective Service examinations. Harking back to the old song—with that sentiment—"I didn't raise my boy to be a soldier"—let me say that I agree. I am not urging you to raise physically fit sons so that they will be able to fight; but think of the job of reconstruction ahead for them if they want to make this world again a fit place for their children and their children's children. Not only must they be fit to take up the burdens of reconstruction where we lay them down, but we want most of all for them to be happy and no adult who is chronically ailing can be happy. But the Selective Service examinations do show us wherein we are failing our children. Statistics show that an enormous number of our boys have defective teeth; we have no doubt been guilty of neglecting our children's first teeth as questions from parents too clearly show their ignorance concerning the importance of these.

The second defect is with the eyes. Poor vision which can so often be corrected entirely in childhood is neglected for the strangest reasons. Sometimes, of course, the parents do not realize that the child needs glasses but just as often they have been told that he does, but think correction is not important, or that spectacles would disfigure their darling, or even that the doctor "just wants to put glasses on every child he sees." Of course many of these eye conditions in childhood are not entirely remedial but parents should at least go as far as they are able in seeking correction.

A third great reason for rejections by Selective Service Boards is heart trouble. Many of these hearts could no doubt have been picked up in childhood. Many of them no doubt came from bad tonsils, rheumatic fever, and other conditions

which could have been checked or prevented altogether.

And so it goes down through the whole list of defects uncovered in adulthood. Remember that poor health disqualifies many of these adults from reaching their ultimate goal in a competitive world even though they may never have to pass Selective Service Board examinations. And the corrections of these defects are generally so simple in childhood that nothing should keep us from providing them for our children. And nothing should keep us from preaching their correction to all parents with whom we come in contact. Competition is close in the adult world; it is equally close in the world of childhood. Therefore, let us give our children every possible advantage in meeting that competition now and in their future. Let us see that all children are prepared for school life before we throw them into it. Let us be prompt in doing for our children those things which we know to be best for them.

Let us—both lay and professional groups—band together to bring to the parents of our school children this message: lay a sturdy foundation for our postwar men and women who are now running about our homes as children; give them plenty of rest, opportunity for wholesome fun and good nourishing food. Thus can we do our share for the present generation of children and exert our influence on the postwar world.

EMOTIONAL DISTURBANCES OF CHILDREN IN WARTIME

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THERE is no difference between the character of emotional disturbances in wartime and in peacetime. The children who would have emotional disturbances in peacetime probably will have them in wartime and, in addition, a certain number of children who would just have managed to avoid them in peacetime, will succumb to them because of the greater variety and intensity of the causes in wartime. As seen in wartime England, the emotional disturbances of children who were separated from their parents in London and sent to foster homes in the country were more severe and more frequent than the disturbances caused by the bombing of the children who stayed in London with their parents. The inability to make a satisfactory adjustment by the evacuated children manifested itself by numerous emotional disturbances. These include: (1) bodily symptoms, such as bedwetting, loss of bowel control, vomiting, sleepwalking and various habit spasms; (2) neurotic reactions, such as various anxiety states and hysterical manifestations; and (3) various social behavior disturbances, such as lying, stealing, abrupt changes of behavior, destructiveness, aggressiveness and submissiveness.

From the Section on Pediatrics, the Mayo Clinic, Rochester, Minnesota. Read before the annual meeting of the Minnesota State Medical Association, Minneapolis, Minnesota, May 19, 1943.

What new factors has the war introduced into the homes that have given young children a feeling of insecurity and have led to an increased number of emotional disturbances? The home is a haven for the child, a place in which he knows every nook and corner, a place in which there is a father and a mother to protect him. In the home there should be some permanence and stability and a continuity in the family circle. It is here that the child obtains the gratification of his desires and it is here that he must learn to make the necessary renunciation of his efforts of gratification that will make him an acceptable member of the family group. The disrupting influences that the war has caused can be summarized in one sentence. It has destroyed, at least temporarily in many homes, one or more of those factors that have made home a haven of safety for the child. "If children ever needed mothering and fathering, they need it now," as Miss Lenroot, head of the Children's Bureau of the United States Department of Labor, has said. Fathers have been taken out of homes into the armed services or into defense jobs at a distance. The feeling of protection that is given by the coming and going of the father each day cannot be replaced by any other person. It is bad enough if the father does not realize the im-

portance of his spending some time with his children, but if he is gone it is more difficult still to fill this void. In many cases, the mother also has entered war service. This has left older children without adequate supervision or with an empty home that they can re-enter with the key that was tied around their neck when they went to school. The mothers return many hours later. The infant and preschool child are placed in a day nursery or nursery school, which often is inadequate because of the lack of personnel and proper quarters. In such home conditions the factors of fatigue and improper diet are bound to place a further strain on the child. Furthermore, in this unnatural environment the child has no opportunity to develop a regular routine and he loses his recreational opportunities. The effect of loss of personnel is here again very evident, as seen in the development of an excellent Boy Scout Troup into a gang of delinquents through loss of its leader. The great migration of the population to the 400 defense centers has resulted in overcrowding to a degree that families who formerly lived in ample homes have to live in single rooms and three people who work different eight-hour shifts often sleep in one bed. It is fortunate that in Minnesota there has not been any great shift of population; therefore, this factor is not as important here as in many defense areas.

How can these defects in the home environment be remedied? In the homes that are still intact, the parents must be made to realize that their children mirror their anxieties and worries, in spite of what may be said to the contrary, namely, "Your children can take it, if you can." Parents must face the facts resolutely. They must be honest with their children in regard to danger and must let them see that a certain degree of anxiety is not an unnatural thing. To keep them busy in the usual channels is building actual morale. Activities that can be engaged in by the family as a whole, contacts such as holding children by the hand, holding the small child closely give it a sense of personal security.

A male relative or friend who can keep contact with the children will help to keep intact the feeling of a protecting father. The mother is harder to replace; therefore, as completely as possible, mothers with young children should be kept out of industry. Their defense work is in the home. When mothers with young children must work, care of children in day nurseries and nursery schools must be arranged. Foster home care or help in the home may in some instances better meet the problem. In the defense areas, better housing and recreational opportunities must be developed as rapidly as possible. The increase of delinquency is in a measure due to the failure of recreational facilities arising from the drafting of trained personnel and this must be remedied as soon as possible by the training of volunteer workers.

For the child of school age the difficulties are equally great. He has not only the difficulties in the home which have been enumerated, but he is subjected to the disrupting influence of the loss of many teachers to the services and replacement by those with less training and natural inclination to teach. More serious still is the closing of many schools because of complete lack of teaching personnel. In the defense areas, even worse is the very lack of school buildings. Here, as in the home, the teacher by her attitude and reassurance accomplishes more by her equanimity, composure and confidence than by anything that she may say. The children feel secure as long as they feel that they "belong" and when they are accepted as equals by their classmates. (The difficulties of various racial groups in the city schools as well as friendly and enemy aliens constitute a difficult problem for even a skilled teacher to handle.) It is the duty of the teacher to see that groups do not become isolated but are brought back into the general group and that an atmosphere of tolerance is developed. By various activities, such as scrap collections and selling defense stamps, the group solidarity can be fostered. The adopting of a military unit by the class increases the feeling of having a part in the war effort. The teacher has the same position in the school that the parent has in the home, but she cannot be expected to overcome that which has been neglected in the emotional education of the child in the home. She merely can develop that which was brought by the child when entering school.

I can best summarize by quoting from the Children's Charter in Wartime as written by the Children's Bureau Commission on Children in Wartime:

> Both as a wartime responsibility and as stepping-stones to our future—and to theirs—we call upon all citizens, young and old, to join together to—

I. Guard children from injury in danger zones.

II. Protect children from neglect, exploitation, and undue strain in defense areas.

III. Strengthen the home life of children whose parents are mobilized for war or war production.

IV. Conserve, equip, and free children of every race and creed to take their part in democracy.

Childhood anxiety can be as devastating as disease.

The home and the school still remain the fountains of security for the child and whatever can be done to compensate for the wartime disorganization of these structures by home-protective, mutual-affection efforts in the family and mutual aid interests in the school will pay remarkable dividends in the health of the children of this country.

CARCINOMA OF THE LUNG

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THE past decade has witnessed marked progress in the field of thoracic surgery and the ability of the thoracic surgeon to deal successfully, in properly selected cases, with carcinoma of the lung. Unfortunately, during this same period there has not been a comparable advance in the prompt and early diagnosis of the disease. The great majority of patients who have carcinoma of the lung still reach an inoperable state before the correct diagnosis is definitely established. If progress is to be made in the successful treatment of this disease, it is imperative that attention be directed to the symptomatology, physical findings, and those diagnostic procedures which will be of aid in its early recognition. With this thought in mind the following study is presented.

From 1925 to 1942, inclusive, the clinical diagnosis of bronchiogenic carcinoma has been made in 948 cases at the Mayo Clinic. In 448 cases the diagnosis was confirmed by microscopic examination of tissue obtained from the primary lesion by bronchoscopy, surgical exploration or postmortem examination. In seventy-three additional cases, the diagnosis was established by biopsy of metastatic lymph nodes or examination of fluid aspirated from the thorax. We shall limit our study to the group of 448 cases.

Bronchiogenic carcinoma is no respecter of age or sex. In our group it was found to occur nearly five times as frequently in the male as in the female sex (Table I). Until thirty years of age it occurs with practically the same frequency in the two sexes. From then on, it occurs with increasing frequency among men as compared with women with each decade, until at the seventh decade it is almost nine times as frequent among men as among women. Like carcinoma elsewhere in the body, bronchiogenic carcinoma occurs more frequently after than before forty years of age. Eighty-eight per cent of the patients in our group were more than forty years of age. The highest incidence of the disease was in the sixth decade.

TABLE I. AGE AND SEX INCIDENCE OF BRONCHIOGENIC CARCINOMA

Age, years	Cases	Male	Female
10–19	2	1	1
20–29	13	7	6
30–39	38	28	10
40–49	108	81	27
50–59	180	157	23
60–69	98	88	10
70–79	8	7	1
80–89	1	1	0
Total	448	370	78

Symptoms

A review of the symptomatology of bronchiogenic carcinoma is of extreme importance if progress is to be made in treatment of the disease.

From the Division of Medicine of the Mayo Clinic and the Mayo Foundation, Rochester, Minnesota.

TABLE II. FREQUENCY OF SYMPTOMS OF BRONCHIOGENIC CARCINOMA

Symptom	Cases	Per Cent	First Symptom, Per Cent
Cough	365	81	37
Loss of weight	316	71	4
Dyspnea	301	67	8
Pain	244	54	21
Hemorrhage	239	53	12
Chills and fever	197	44	?
Wheeze	54	12	3
Clubbing of fingers	40	9	0.9
Hoarseness	34	8	2
No thoracic symptoms	23	5	—

Only by calling attention to its earliest and most common symptoms can this be accomplished. One of the greatest obstacles to the early diagnosis of carcinoma of the lung is the fact that it does not give rise to a characteristic train of symptoms. The symptoms are those associated with pulmonary inflammatory disease in general. Because of this, all too frequently the patient is allowed to go an undue length of time before a thorough examination is undertaken, and by then the carcinoma often has reached a hopeless state.

The symptoms caused by bronchiogenic carcinoma depend largely on the situation of the tumor and the degree of bronchial obstruction it produces. In Table II are listed the most common symptoms encountered among the 448 patients in this group, and the frequency with which each was the first symptom to appear. Cough was by far the earliest and most frequent symptom mentioned, and at the onset was usually dry and nonproductive. A large percentage of the normal population suffer from a so-called "cigarette cough" and fairly frequently the first warning of serious disease is so misinterpreted. It is therefore imperative in any case in which an unexplained, persistent cough develops, especially if the patient is more than forty years of age, that the possibility of carcinoma of the lung be entertained seriously.

As the tumor increases in size and fills the lumen of the bronchus, it interferes with normal drainage of the bronchi distal to the lesion. The retained secretion furnishes an excellent cultural medium for invading organisms and, depending on the character of such organisms, bronchitis, bronchiectasis or abscess may develop. The cough may now become productive and the sputum purulent.

With further increase in size of the tumor, edema of the bronchial mucosa or plugging of a reduced bronchial lumen by thick, tenacious secretion, there may be a damming back of secretions. This gives rise to chills and fever. Usually, after an interval of three to five days, the bronchial obstruction is relieved by evacuation of the retained secretion, with relief of the chills and fever. Very frequently, such an episode is mistaken for an attack of pneumonia and the patient is treated on this assumption. It is of significance that in approximately half the cases, a diagnosis of pneumonia had been made at some time or other during the course of the patient's illness. This illustrates the importance of a careful antecedent history in every case of suspected pneumonia.

Approximately half of the patients gave a history of expectoration of blood. This may vary from streaking of the sputum with blood to very copious or even fatal bleeding. Because the bleeding is usually associated with cough, the underlying condition can easily be mistaken for pulmonary tuberculosis, and at times the differential diagnosis may be extremely difficult. Thirteen of the patients in our series spent several months in tuberculosis sanatoriums before the correct diagnosis was established.

As the pulmonary carcinoma increases in size, it decreases the caliber of the bronchial lumen either by intrabronchial enlargement or by extrabronchial compression, interfering with the air entering and leaving the lung distal to the point of obstruction so that atelectasis soon develops. As a consequence of this development, dyspnea is likely to occur. Dyspnea may also be produced by compression of the lung from accumulation of fluid in the pleural space, which is invariably due to extension of the carcinoma to the pleura. Pleural fluid was present in 15 per cent of our cases. Dyspnea associated with carcinoma of the lung often seems out of proportion to the size of the lesion and the degree of associated atelectasis. It usually is gradual in its development, but occasionally occurs with great sudden-

ness. When the dyspnea is sudden in appearance, and especially when it is associated with wheeze, it may occasionally be incorrectly regarded as being due to asthma.

Pain was noted as a presenting symptom in more than half of our cases. This varied from a sense of discomfort or pressure to a severe, sharp pain requiring morphine for relief. The appearance of sharp pain in bronchiogenic carcinoma is of especial significance, for it usually indicates that the carcinoma has spread to the pleura, thoracic cage, mediastinum and neighboring nerves, and usually means that the condition is inoperable. Occasionally, pain is the first symptom manifest. This is especially true if the carcinoma arises in the apex of the lung, the so-called superior sulcus carcinoma. The pain in this condition is caused by impingement of the growth on the brachial nerves, and usually first appears about the tip of the shoulder and about the shoulder girdle. In its early stage it is invariably regarded as being due to neuritis and is incorrectly treated as such.

Hoarseness is a relatively infrequent and late manifestation of bronchiogenic carcinoma. When present, it is of considerable prognostic significance, as it means that the carcinoma has spread to the mediastinum and has involved the recurrent laryngeal nerve.

Although loss of weight occurs frequently, it does not have any direct relation to the operability of the carcinoma. The same is true with respect to clubbing of the fingers. Although clubbing was usually observed in the cases in which there was pulmonary suppuration associated with the pulmonary carcinoma, this was not invariably true. In four cases, clubbing of the fingers was the first manifestation of difficulty.

A most interesting group of cases is the 5 per cent in which there were no symptoms referable to the thorax and in which the condition was detected during the course of a routine physical examination, or in which the patient had been referred for a special examination of the chest because of unusual neurologic findings. In nineteen cases, or 4 per cent, the only symptoms were those referable to the central nervous system. This group reveals how early bronchiogenic carcinoma metastasizes to the central nervous system, a fact that has led our Section on Neurology to obtain a routine roentgenogram of the thorax in the case of every patient suspected of having an intracranial or intraspinal lesion. In fifty-three cases, or 12 per cent, symptoms referable to the central nervous system were observed.

The average duration of symptoms from onset until the diagnosis was made was eight and a half months. There are three important reasons for this deplorable delay in diagnosis: (1) the lack of specificity of the symptoms; (2) failure to suspect the presence of a carcinoma of the bronchus; (3) difficulty in establishing a positive diagnosis even when the condition is suspected.

Physical Examination

The physical findings in primary carcinoma of the bronchus are dependent on the situation of the tumor, its size, the degree of bronchial obstruction produced, the secondary inflammatory changes present and the degree of pleural involvement. A small tumor in the periphery of the lung may escape detection even with the most careful examination, and may be found only on roentgenologic examination.

A most valuable, but frequently neglected, aid in diagnosis is inspection of the thorax with the patient in the recumbent position. This often will give more information than any other procedure. It will be noted that expansion of the chest on the involved side lags behind that on the unaffected side. Special attention should be directed to the presence of a wheeze. This can be elicited most easily by having the patient breathe with the mouth open in the recumbent, upright and bending forward positions, the examining ear being held close to the patient's mouth. If the region of atelectasis or the tumor itself is in close proximity to the chest wall, one may elicit dullness on percussion over the involved region. The presence of pleural fluid or pulmonary suppuration can easily obscure all findings. On auscultation, the most important findings is suppression of breath sounds over the region of involvement, which may indicate bronchostenosis. In cases in which secondary infection has developed and bronchial obstruction is not complete, there may be scattered coarse râles associated with the suppression of breath sounds.

A careful search should be made in every case for metastatic lymph nodes. Table III demonstrates the frequency with which metastatic lymph nodes were discovered on routine physical ex-

amination. They were observed in 15.4 per cent of the cases. Although this is obviously a late sign, there is probably no other clinical finding that so expedites the diagnosis and settles the problem of prognosis and treatment as the discovery of a firm, well fixed supraclavicular, cervical or axillary node. This is such an important and frequent clinical manifestation that a careful search, particularly for supraclavicular nodes, should be made in every physical examination.

TABLE III. PRESENCE OF METASTATIC LYMPH NODES

Site	Cases
Supraclavicular	42
Cervical	13
Axillary	4
Submaxillary	1
Multiple	7
Chest wall	2
Total	69

Roentgenographic Examination

Roentgenographic examination of the thorax is second in importance only to a thorough history and physical examination in the early diagnosis of bronchiogenic carcinoma. We believe that this should be a routine procedure in the case of every patient who has a chronic cough, pain in the thorax, expectoration of blood, unexplained fever or loss of weight and in the case of any patient who is having a general physical examination. This latter belief is substantiated by the fact that in this series there were twenty-three patients who had not had any pulmonary symptoms. The diagnosis in these twenty-three instances was not suspected until the lesion was discovered by routine roentgenographic examination of the thorax. In 73 per cent of our cases, the roentgenologist correctly suspected the presence of a bronchiogenic carcinoma from the roentgenogram alone. In most of the other cases a pulmonary lesion was manifested by roentgenographic examination but carcinoma of the bronchus was not suspected. This lesion was most frequently confused with lymphoblastoma, bronchiectasis, pulmonary abscess, benign tumors, pleural effusion, tuberculosis and aortic aneurysm.

It is also important to remember that a negative roentgenogram does not definitely rule out the presence of carcinoma. If the history or physical findings even vaguely suggest the presence of carcinoma of the bronchus, one should not be deterred by a negative roentgenogram from performing further and more extensive diagnostic procedures.

Bronchoscopy

The early diagnosis of carcinoma of the bronchus can be confirmed most easily and accurately by bronchoscopy. If this procedure is employed whenever there is any suspicion of such a lesion, the early diagnosis will be facilitated and in many more cases the carcinoma will be discovered before it reaches an inoperable state. Bronchoscopy is also of value in determining the character and the exact situation of the tumor, particularly its relation to the carina, and is therefore helpful in deciding on the operability of the lesion. Care must be exercised, however, in determining whether a tumor that projects into the lower part of the trachea actually involves the carina, the main bronchial opening or the trachea, or is simply a projection of a tumor which originates lower down in the bronchus.

Bronchoscopy may also be of value in aspirating retained secretion, a measure which often is of aid in improving the patient's general condition, thereby decreasing the surgical risk should pneumonectomy be contemplated. It may be necessary to repeat bronchoscopy a number of times before a satisfactory piece of tissue can be obtained for microscopic examination. A negative result of bronchoscopic examination does not rule out the possibility of a bronchiogenic carcinoma.

Bronchoscopic examination was performed in 399 of our cases, and a positive biopsy was obtained in 368 cases, or 92 per cent. This, however, does not truly represent the accuracy of this diagnostic procedure, since many cases were not included in the series because of failure to obtain suitable biopsies. In the total group of 948 cases studied, bronchoscopy was performed in 636 cases, and 399 cases, or 63 per cent, positive tissue was obtained. This latter figure likewise is not absolutely accurate as to the efficiency of bronchoscopy as a diagnostic aid because in

nineteen of the cases, although a definite tumor could be visualized through the bronchoscope, it was not possible to obtain a satisfactory specimen for biopsy; the diagnosis of bronchial carcinoma was confirmed later at the time of operation or at necropsy. There is also a possibility that in not all of the 636 cases in which bronchoscopy was performed was the condition actually primary carcinoma of the lung, even though it was regarded as such clinically.

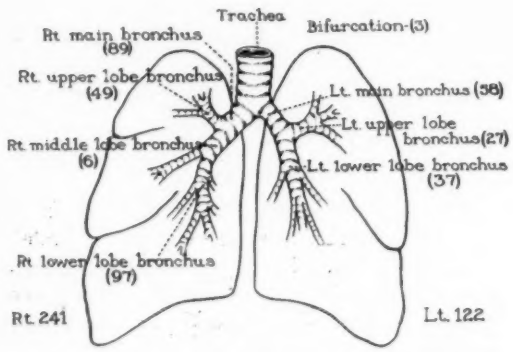

Fig. 1. Site of tumor in 368 cases (location of two unknown).

Situation of Tumor

A study of the situation of the carcinoma in our group of cases was of interest. The right lung was found to be involved approximately twice as frequently as the left lung. In 368 of the 448 cases, the data were sufficiently accurate to designate a definite lobe in which the tumor was situated. This distribution according to lobe is illustrated in Figure 1.

Pathology

The tumors were typed and were graded according to Broders' classification (Table IV), in which grade 4 is the highest degree of malignancy and grade 1 the lowest. Squamous cell carcinomas were slightly more frequent than adenocarcinomas, being 52 per cent of the tumors that were typed, as against 45 per cent for adenocarcinomas. Of the adenocarcinomas, 149 affected men and thirty-two, women. For squamous cell carcinoma the corresponding figures were 187 and twenty-four. The importance of early diagnosis and prompt surgical intervention is readily apparent when one realizes that 50 per cent of pulmonary carcinomas that were graded were of grade 4 malignancy. Thirty-three per cent of the carcinomas that were graded were of grade 3 malignancy. Thus, a total of 83 per cent of the tumors were of a high degree of malignancy.

TABLE IV. TYPE AND GRADE OF BRONCHIOGENIC CARCINOMAS

Type and Grade	No. Cases
I. Adenocarcinoma	181
Grade	
1	32
2	24
3	52
4	71
Not graded	2
II. Squamous cell carcinoma	211
Grade	
1	0
2	10
3	78
4	122
Not graded	1
III. Mixed adenocarcinoma and squamous cell carcinoma	13
IV. Not Specified	43

We have included thirty-two cases of adenocarcinoma grade 1, the so-called adenoma, because we regard these tumors as potentially, if not actually, malignant. In one case of adenocarcinoma grade 1, or so-called adenoma, invasion of the wall of the bronchus and of the mediastinal lymph nodes was observed at necropsy. Grade 1 adenocarcinomas, or so-called adenomas, differ from other types of bronchiogenic carcinoma in that they occur in younger persons, have a different appearance on bronchoscopic examination from other bronchiogenic carcinomas, are much slower in development and seldom metastasize. If they are permitted to remain in the bronchus, they will lead to pulmonary suppuration and eventually to the death of the patient.

Necropsy was performed in seventy cases. The incidence and location of metastasis are listed in Table V. A diagnosis of Addison's disease had

been made clinically in one of the cases, in which there were metastatic lesions in the adrenal glands, which were found to be almost completely destroyed. There was pleural effusion in 27 per cent of the seventy cases, and in 16 per cent of them the effusion was hemorrhagic. Pulmonary abscess, bronchiectasis or empyema was present in 44 per cent of the seventy cases.

TABLE V. METASTASIS FOUND AT NECROPSY

Situation	Cases	Per Cent
Lymph nodes (regional)	55	79
Lungs and pleura	34	49
Adrenals	25	36
Liver	24	34
Bones	16	23
Vertebræ	10	14
Ribs	8	11
Sternum	1	1
Pelvis	2	3
Femur	1	1
Brain	13	19
Pericardium and heart	13	19
Kidney	15	21
Brachial plexus	2	3
Spinal cord	1	1

Prognosis

A follow-up study was made in 315 cases, or 70 per cent. The average duration of life after diagnosis was made was six months. The prognosis was the same in both adenocarcinoma and squamous cell carcinoma, regardless of the grade of the tumor. The average duration of illness from the first symptom until death was fourteen and a half months. Since it required an average of eight and a half months after onset of symptoms to make the diagnosis, the patients had obviously lived more than half their expectancy before there was any opportunity to consider surgical exploration. This is undoubtedly the most important cause of the poor prognosis of bronchiogenic carcinoma, since the type and grade of the tumor were not factors in this series of cases.

Conclusions

It is obvious that if progress is to be made in the successful treatment of bronchiogenic carcinoma, earlier diagnosis or improvement in present methods of medical and surgical treatment must take place. Inasmuch as no new successful method of treatment has presented itself on the medical horizon, and it is known that pneumonectomy, if performed early, offers the best chance of cure, it is self-evident that early diagnosis becomes the most pressing problem, The medical profession is face to face with the fact that bronchiogenic carcinoma does not always present a characteristic picture, but a picture seen frequently in other types of pulmonary disease. It would therefore seem advisable to suspect the possibility of an underlying bronchiogenic carcinoma in any case, especially if the patient is more than forty years of age, in which pulmonary symptoms of unexplained causation develop. Thorough physical examination alone is not sufficient; a roentgenogram of the thorax should also be made. It is only by adhering to this rule that one can hope for progress at the present time in dealing with this important problem.

Until recently, primary carcinoma of the lung was regarded as a relatively rare type of cancer. We are now recognizing that it is one of the commonest forms of neoplasm. It has been discovered that around 10 per cent of all cancers originate in the lung, that this organ is surpassed only by the stomach as the most frequent site of beginning malignancy, and that approximately 15,000 Americans succumb annually to carcinomata that arise from lung structures, usually in the bronchi. Such stark statistics and the demonstrated fact that cancer of the lung, like pulmonary tuberculosis, can be found early by employment of readily available diagnostic facilities, provide all physicians with food for thought as they evaluate the chest complaints presented by patients, especially men, and particularly those past forty years of age.—*Tuberculosis Abstracts*, December, 1943.

USE OF CURARE IN METRAZOL TREATMENT OF PSYCHOSES

Report of Manic-Depressive Case Complicated by a Compression Fracture of the Spine

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OUR experience at the Saint Peter State Hospital has confirmed the findings of Bennett,[1] Cottington,[5] and others that metrazol produces a high percentage of remissions, in a relatively short length of time, in those psychoses characterized by depression. Even some with a senile or arteriosclerotic psychosis with depression as the outstanding feature have shown a complete disappearance of this symptom.*

The depressions seen in this State Hospital are primarily manic-depressive and involutional melancholia. Our results with the first one hundred patients in these two categories, treated with metrazol, have been good—seventy-two appearing entirely normal at the termination of treatment (save for recent memory defects which will be referred to later). In addition eleven others showed varying degrees of improvement short of complete. Fourteen showed no improvement at all. In three the treatment was not completed because of complications.†

Symptom duration appears of some significance as eight of the fourteen patients showing no improvement had a duration of symptoms in excess of two years, and in three others it was greater than one year.

Metrazol is not, with the possible exception of involutional melancholia, to be considered a cure in the ordinary sense of the word. With the aforementioned exception, depressions are prone to recur, given the right situation, and it is perhaps better to use "remission," "improvement" or some comparable term rather than "cure."

Involutional melancholia and manic-depressive psychoses (depressive phase) ordinarily carry a favorable prognosis and the majority will recover from the given attack, in time, with any type of treatment, or with none. However, we believe that metrazol, and judging from the favorable reports in the literature, electrical shock, markedly shorten the period of illness and thus are a distinct benefit to the patient and his or her family.

Soon after metrazol became rather extensively used it was discovered that the convulsion associated with this therapy was producing many compression fractures of the spine.[6,7]

After first trying various mechanical devices and drugs in attacking this problem, Bennett[2] found that curare, a poison used by South American Indians which inhibits passage of a nerve impulse across the myoneuro junction, effectively "softened" the metrazol convulsion without impairing its therapeutic effectiveness.

The following case is reported because we were able to continue giving metrazol therapy, in spite of a compression fracture of the spine by the use of curare.*

Mrs. X, aged fifty, was admitted to the hospital, July 9, 1942, after having attempted suicide by drowning two days previously. The patient was a Normal School graduate who taught until her marriage at twenty-six. Her husband, a farmer, aged sixty-two, and a son, aged nineteen, were both living and well. There had been one miscarriage.

Upon admission the patient was agitated and depressed. She paced the floor continuously, wringing her hands, and bemoaning that everyone now knew that she was "no good," that there was nothing to live for, that she was disgraced, and could never again face her relatives and friends. A more formal history revealed that at the age of eighteen she had sexual relations with an uncle who lived under the same roof. Shortly afterward she became depressed, was not hospitalized, and spontaneously improved in about four months. This uncle died about one year prior to the patient's admission. She believed that he had left her in his will a sum of money because of prior relations with him and that everyone now knew the true reason for this; in fact, full accounts of the matter were being published in the local newspaper. In consequence she felt disgraced, withdrew from associating with her friends because they were making derogatory remarks concerning her, found that she could no longer per-

*Our oldest patient in this category was sixty-nine years old, had generalized arteriosclerosis and a moderate hypertension. His treatment (seven convulsions) was uneventful. He has been home since September, 1942, and is reported as doing well.

†Therapy was discontinued for the following reasons:
1. Developed an aspiration pneumonia and died.
2. Pulmonary tuberculosis reactivated.
3. Compression fracture of the spine (prior to our use of curare).

*Intocostrin Squibb was the solution of curare used. This is packaged in 5 c.c. rubber capped vials containing 20 mg. per c.c. of the active curare principle. The product has not been released under the provisions of the Federal Food and Drug Act and is as yet obtainable only under certain prescribed conditions.

form her usual household tasks, developed anorexia and insomnia, finally jumped in the cistern with suicidal intent.

Her menses had been normal until about three or four months previously. At that time, they stopped abruptly to return two weeks before admission. This was a heavier and more prolonged flow than usual. For two months she had noticed hot flashes.

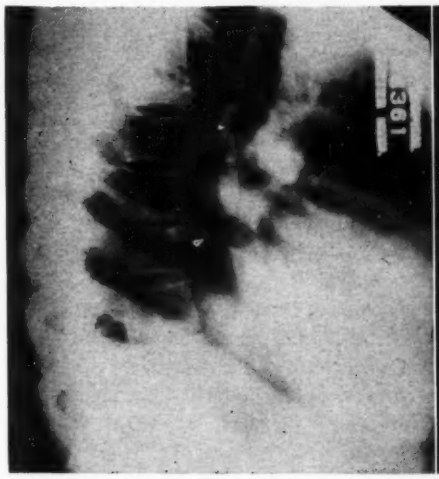

Fig. 1. Radiograph taken August 4, 1942, showing a compression fracture of the fifth thoracic vertebra. This was undoubtedly caused by the use of metrazol.

Fig. 2. Radiograph taken October 27, 1942, showing no aggravation of the fracture, although in the intervening period fourteen curare-metrazol convulsions were given.

Her brother and her father's sister had had one and several attacks of depression respectively. Had there been no previous depression she would have been regarded as a rather typical case of involutional melancholia. However, in view of her history, the diagnosis was made of manic depressive—depressive psychosis.

From July 12 to 15, it was necessary to place her in restraint because she thought other patients were making sarcastic references to her illicit sex experience and persisted in striking and throwing chairs at them.

She continued depressed, agitated, and actively suicidal until July 17 (eighth hospital day) at which time metrazol was started. No x-ray of the spine is taken at this hospital prior to the inauguration of therapy unless a specific indication is present. In her case there was no history of injury to her back, although she had frequent attacks of "lumbago." In jumping into the cistern she stood within three feet of the water level and stepped "easily" into seven feet of water without hitting bottom or striking her back against the opening into the cistern. After five treatments (all producing convulsions) the patient complained of pain "between my shoulder blades," a symptom not previously present. An x-ray was obtained on August 4 (Fig. 1) which disclosed a compression fracture of the fifth thoracic vertebræ. The therapy was discontinued. Her mental condition appeared moderately improved. A few days later she began to relapse and developed a new worry. She feared that one hundred pounds of sugar purchased before rationing, and properly declared when sugar rationing coupons were obtained, was in some way illegal and would lead to her husband's arrest. Although her husband realized she was not in good mental condition he requested, and was permitted, to take her home. Two days later she was returned because of a definite increase in her agitation and threats of suicide.

In the administration of curare 15 to 20 mg. to 20 pounds of body weight are given intravenously in one to one and a half minutes. (As a precaution 1 c.c. less than the estimated dose is given the first time.) If the desired effect is obtained (tested by inability of the patient to raise the head off the bed two minutes after completion of injection) metrazol is given in the usual way,[4] twice a week. The result is a "convulsion" attended by minimal muscular contractions.

On August 20, no improvement being as yet apparent therapy with curare and metrazol was started. After twelve such treatments the patient seemed entirely over her depression and following fourteen treatments the therapy was discontinued (October 16). Throughout she exhibited about the same degree of apprehension with curare-metrazol as with metrazol alone, i.e., feared that she would not wake up, complained about the terrifying sensation experienced when "going under," et cetera.

All local symptoms of pain, et cetera, referable to her back had disappeared by the time curare-metrazol was

started although no treatment,* not even bed rest, was given. No cord symptoms were present at any time.

Throughout two weeks following completion of therapy she exhibited complete insight. She realized that she had undergone another depression, explained that her former statement regarding sexual relations with her uncle was true but there had been no reason to believe that this had been publicized and that her so believing must have been "imagination." She had not received any legacy from him. She remembered vaguely worrying about something concerning sugar, could not recall the details, but realized that there could have been no adequate reason for her fear. Her mood was cheerful, she associated normally with her companions, showed an active interest in her environment, and manifested a hopeful attitude toward the future. Her only concern was over a noticeable forgetfulness. Names of new patients she met could not be remembered the next day, items read in the paper were soon forgotten, and so on. She readily accepted the explanation that this often occurred with metrazol[8] and would eventually disappear.

An x-ray October 27 (Fig. 2) showed no significant change in the appearance of her fractured vertebræ.

On November 8, 1942, she was paroled to her husband.

In March, 1943, the patient and her husband were interviewed. She stated that she had felt her usual self since returning home; had done all her housework; had resumed her usual social activities, was cheerful and optimistic.

The forgetfulness about which she had complained prior to her parole had gradually disappeared and both the patient and her husband believed her memory to now be as good as ever. Her menses had returned three weeks before parole and had continued with a normal twenty-eight day cycle. There was nothing unusual about the character or duration of flow. She had not noted "hot flashes" since leaving the hospital.

She inquired as to whether curare and/or metrazol was a cure for "lumbago." She explained that for as long as she could remember she had had an average of at least one attack a month, that these were severe enough to often cause her to remain in bed for about one week, and that in the approximately four months since her parole she had had none; in fact, "As long as I can remember I have never gone so long a time with no pain in my back."

Her husband stated that he believed his wife to be her usual self, albeit somewhat "down in the dumps" for an hour or two not oftener than once a week. He explained that it was customary for her to exhibit this trait and that she had done so for as long as he had known her.

*It has been known that compression fractures often occur with epileptic convulsions, cause only minor symptoms or none at all, and commonly require no treatment.[5] Nevertheless, deliberately inducing convulsions, in the presence of a recent compression fracture, would seem contraindicated.

Summary

A case of depression is reported which, when treated with metrazol, developed a compression fracture of the spine. Metrazol was continued by combining its use with curare. There was no aggravation of the fracture. A good therapeutic result was obtained. Coincidentally, frequent attacks of "lumbago" have, at least to date, been favorably modified.

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THE DISCOVERY OF THE PULMONARY CIRCULATION OF THE BLOOD

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WILLIAM HARVEY'S essay "Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus" is a complete and systematic discussion of the circulation of the blood. One who reads this essay with thoroughness and peruses without bias what his "precursers" wrote on the circulation of the blood must be convinced that credit for its discovery should be given solely to the great Briton. It is his *comprehension of the idea of the circulation in its entirety* and his ability to produce *complete proof* of his discovery

On the occasion of Max Neuburger's seventy-fifth birthday anniversary (December 8), the translation of this very important but generally overlooked article is presented. Translated by Alfred Rosenthal, Saint Paul, Minnesota, from Sudhoff's Archiv für Geschichte der Medizin, 23:7-9, 1930.

that makes his scientific work appear so valuable in comparison with all previous efforts.

Even those who still, out of national preference, award the laurels to Caesalpinus, cannot deny Harvey's superiority in the presentation and proof of his facts. Except among a very small number of authors, the common opinion prevails that nobody discovered and described the circulation of the blood *in toto* earlier than Harvey, and that any credit which might be given to his predecessors, especially Servetus and Realdus Columbus, must be for having found only a part truth on the ground of anatomical observations and experimental research.

Servetus and Realdus Columbus rejected the Galenic hypothesis, according to which blood passes from the right ventricle through the septum into the left ventricle. They recognized that the way the blood travels must be a different as well as a longer path, extending from the pulmonary artery through the parenchyma of the lungs into the pulmonary veins. Servetus says in his script *Christianismi Restitutio:* "Fit autem communicatio haec non per parietem cordis medium, ut vulgo creditur, sed magno artificio a dextro cordis ventriculo, longo per pulmones ductu, agitatur sanguis subtilis. A pulmonibus praeparatur, flavus efficitur et a vena arteriosa in arteriam venosam transfunditur." In the main, Realdus Columbus made a like statement, and in addition proved the presence of blood in the pulmonary veins: nam sanguis per arteriosam venam ad pulmonem fertur ibique attenuatur. Deinde cum aëre una per arteriam venalem ad sinistrum cordis ventriculum defertur, quod nemo hactenus aut animadvertit aut scriptum reliquit" (De Re Anatomica VII).

From these quotations, especially in recent times, the conclusion frequently was drawn that Servetus and, independently, Realdus Columbus discovered and described the *pulmonary circulation* and that Harvey merely confirmed what others had discovered earlier.

I cannot share this opinion, which is unfortunately very common and often expressed in literature. On the contrary, I claim that only Harvey, on the ground of certain premises, was in a position to discover the lesser circulation and to conceive its principles.†

†Harvey did not make known the full experimental proof until 1651; he writes in a letter to Slegel, a physician in Hamburg, that he succeeded in forcing water from the pulmonary artery into the pulmonary vein and the left ventricle.

A simple consideration shows that a clear conception of the lesser circulation is unthinkable without the knowledge of the greater circulation. Both constitute one. It seems hardly possible that anybody could have imagined the small circulation without associating with it simultaneously the idea of the large circulation. The concept *pulmonary circulation,* of course, is always to be understood in Harvey's meaning, that is, *that the total blood flows from the right ventricle through the lungs into the left.**

If Servetus and Realdus Columbus really discovered the lesser circulation it would be a priori inconceivable that they did not also realize the existence of the systemic circulation. For where else could the *total blood* which had poured into the left ventricle from the lungs, flow off but into the aorta and into the arterial system? Whence could the total blood which entered the pulmonary artery and the lungs from the right ventricle have come but from the venous system?

Both Servetus and Realdus Columbus adhered to Galen's doctrine, which states that the blood is prepared in the liver and that *most of it flows into the right ventricle and from here into the veins.* Was this doctrine still compatible with the discovery of the lesser circulation, that is, with the recognition of the fact that the total blood flows from the right ventricle through the lungs into the left? Certainly not.

Neither Servetus nor Realdus Columbus taught that the total blood goes through the lungs. How else could they have maintained the erroneous ancient theory that the main part of the blood flows from the right ventricle through the veins to the various parts of the body? Servetus and Realdus Columbus rejected only the portion of Galen's hypothesis which says that *a small part* of the blood which had entered the right ventricle penetrates the septum to be transformed into *spiritus vitalis* in the left ventricle. Both authors showed that blood could not pass

*Harvey's lecture notes of 1616 show that as early as that year he conceived the small and the large circulation as a whole.

"W. H. constat per fabricam cordis sanguinem
per pulmones in Aortam perpetuo
transferri, as by two clacks of a water bellow to rayse water
constat per ligaturam transitum sanguinis
ab arteriis ad venas
unde Δ perpetuum sanguinis motum
in circulo fieri pulsu cordis . . ."

TRANSLATOR'S NOTE: These lecture notes were written twelve years before the publication of *De Motu Cordis.* W. H. are Harvey's initials which he is supposed to have put opposite statements he considered original. The delta in the line before the last stands for "it is demonstrated."

through the septum, that it has to take its way through the pulmonary artery, the lungs, and the pulmonary vein. However, what they had in mind *was not the total blood but only that part of it which was supposed to be turned into spiritus vitalis.*

No mention is made either by Realdus Columbus nor by Servetus of the small circulation as explained by Harvey, who based his doctrine upon the fact that the total blood circulates. Columbus deals extensively in the second chapter of the eleventh book of his work *De Re Anatomica* with the function of the lungs, which is to prepare for the production of the spirits of life. He says there: *Aërem namque per nares et os inspiratum suscipit; nam asperae arteriae vehiculo per universum pulmonem fertur pulmo vero aërem illum una cum eo sanguine miscet, qui a dextro cordis ventriculo profectus per arterialem venam deducitur.*" The demonstrative pronoun preceding the word *sanguine* shows that Columbus did not consider the total blood but *merely part of it.*

Harvey was the *discoverer* not only of the greater but also *of the lesser circulation.*

PLASMA AND SERUM TOXICITY DUE TO A AND B SUBSTANCES

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IN previous publications,[4,5] we have reported reactions following the transfusion of group specific plasma. Some of these reactions were shown to be due to soluble A and B substances which Schiff[6] first demonstrated to be present in human serum. We have recently encountered one patient sensitive to both A and B substances, whereas the others, we have observed were sensitive only to one or the other of these factors. This case permitted a study of the effect of pooling on the sensitivity to the A and B factors.

P. C., aged forty-three, blood group O, diagnosis inguinal hernia. Repeated skin tests to A and B purified substances and to A, B, and AB plasma were positive. O plasma gave a negative skin test. On September 10, 1942, he received 100 c.c. of undiluted type A plasma intravenously. After approximately 20 c.c. had run in, the patient developed a generalized erythema, epiphora and dyspnea. The skin became cool and moist. The blood pressure dropped from 130/60 to 104/60. The pulse became rapid and weak. These symptoms were allowed to continue for about ten minutes. He was then given 0.5 c.c. of 1/1000 adrenaline hydrochloride intramuscularly with rapid relief. On September 11, 1942, the patient was given 100 c.c. of undiluted O plasma without reactions. On September 12, 1942, skin test to pooled equal parts of A and B plasma were positive, as were also the skin tests to a commercial pool of serum* containing 9 group O, 8 group A, 3 group B, and 1 group AB serums. Subsequent transfusion with the pooled serum giving the positive skin test resulted, after 10 c.c. had been given, in generalized erythema, epiphora, dyspnea, a fall in blood pressure and a rapid pulse. These symptoms were relieved again by the intramuscular injection of 0.5 c.c. of 1/1000 adrenaline hydrochloride. As a control, 100 c.c. of the same serum pool was given to a non-sensitive patient without reactions.

As suggested in an editorial[3] in the *Journal of the American Medical Association,* we skin-tested this patient on September 22, 1942, with pooled A and B plasma in the ratio of 5:1 and 2:1. The skin tests in both these dilutions remained positive. We were, however, unable to transfuse this patient with plasma in the above ratios at this time.

The results obtained in this case confirm our previous observations[5] that pooling does not neutralize the skin reacting substance, nor, necessarily, the transfusion reaction properties of the A and B factors. It also demonstrates that no single ratio of plasmas or serums in a pooled specimen, as suggested by Aubert and his associates[1] is sufficient to neutralize the reacting substances.

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*Obtained from Human Serum Center, University Hospital.

It is possible at this time to summarize the evidence for the existence of A and B factor sensitivity as observed in cases reported previously and some as yet unpublished:

1. Individuals with A or B isoantibody are occasionally found to be sensitive to the corresponding A or B substance present in plasma or serum.

2. Individuals sensitive to these factors evidence this sensitivity by repeatedly positive skin tests to different samples of group specific plasma or serum of a blood group containing the reacting substance, but not to plasma or serum of the other groups.

3. These individuals also show their sensitivity by reacting to intravenous administration of different samples of group specific plasma and serum containing the specific reacting substance (A or B factor) but not to other plasmas or serums.

4. These individuals are sensitive by skin test and by intravenous administration to the chemically purified A and B substances developed by Witebsky and his co-workers.[7] These same substances give no reaction either dermally or intravenously in non-sensitive individuals.

We have run adequate controls including dividing many of the testing fluids into two portions, giving one to sensitive and one to non-sensitive individuals. Thus pyrogens and other non-specific factors are further eliminated as a possible cause of reactions.

The results of pooling are as yet unexplainable, since we have demonstrated as have others, the combination of isoantibody and the dissolved substances in pooled plasma as evidenced by the disappearance of the isoantibody. We must conclude that either combination does not neutralize the reacting substance or that the combination is not quantitatively exact enough to cause complete neutralization.

We want to emphasize that plasma and serum are still the best blood substitutes, and that plasma is saving a tremendous number of lives on the battlefield; our work is intended to eliminate the relatively few reactions which occur. There can be no doubt that they do occur, the most recently reported being due to dried pooled plasma.[2] It is also apparent from our work that the A and B factors constitute only one cause of transfusion reactions due to plasma and serum. The other types encountered will be described elsewhere.

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PROBLEMS ENCOUNTERED IN EXPLAINING CERTAIN CASES OF ERYTHROBLASTOSIS FETALIS ON THE Rh THEORY

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THE etiology of erythroblastosis fetalis has long been an etiological puzzle. Darrow[1] in 1938 thought that an antigen-antibody reaction offered the best explanation for the disease. This would account for the frequent familial tendency; the apparent health of the parents; the fact that the first child of the marriage was usually normal; and the clinical and postmortem findings. Levine and Stetson[7] in 1939 described a transfusion reaction in a woman previously never transfused but who had delivered a macerated fetus. They suggested that an immunizing property in the blood and tissues of the fetus must have been responsible for immunizing the mother, as the usual blood groups were compatible. The Rh factor was described by Landsteiner and Wiener[3] in 1940 as a new agglutinogen in the red cells of humans. The relationship between the rhesus monkey antigen and the Rh factor of human blood has not been explained. The theory offered

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TABLE I. DISTRIBUTION OF R_h FACTOR IN POPULATION

Author	No. Cases	Rh Positive	Rh Negative
Levine[4] 1941	1,035	86.0%	14.0%
Wiener[9] 1942	777	86.6%	14.4%
Fisk and Ford[2] 1942	927	85.0%	15.0%
Total	2,739	85.8%	14.3%

by Philip Levine and Alexander Wiener to explain erythroblastosis is as follows. The Rh factor is inherited as a Mendelian dominant. If the father possesses the Rh factor at least 50 per cent of his offsprings will be Rh positive. If the mother lacks the Rh factor and the fetus is Rh positive, agglutinogens in the red cells of the fetus through a hypothetical break in the placental barrier may immunize the mother. The mother may then develop antibodies in her serum that are capable of passing through the placenta and destroying the baby's red blood cells. This blood destruction leads to the clinical and pathological picture of erythroblastosis.

During the past three years, Levine and Wiener have gathered convincing evidence to support their theory. Table I shows the distribution of the Rh factor in 2,739 people taken from the general white population as determined by three independent investigators. It is seen that approximately 85 per cent of the white population is Rh positive. Levine[5] found that 93.7 per cent of American negroes and 92.2 per cent of American Indians were Rh positive. In 150 Chinese tested, 99.3 per cent were Rh positive. One would expect erythroblastosis to be rare in these races. Table II shows the distribution of the Rh factor as found by Levine and Wiener in 178 women who had given birth to erythroblastotic infants. The fact that only 12 per cent of these mothers were Rh positive as compared to 85 per cent of the general population is very significant. Moreover it shows that all cases of erythroblastosis cannot be explained on the Rh theory as 12 per cent of the mothers were Rh positive. The following case is reported as it illustrates the difficulty encountered in explaining certain cases of erythroblastosis on the Rh theory.

TABLE II. DISTRIBUTION OF R_h FACTOR IN MOTHERS OF BABIES WITH ERYTHROBLASTOSIS

Author	No. Cases	Rh Positive	Rh Negative
Levine[4] 1942	153	8%	92%
Wiener[9] 1942	25	16%	84%
Total	178	12%	88%

Case Report

A full-term infant was delivered at St. Barnabas Hospital on February 3, 1943. This was the mother's third pregnancy. The first child was living and well and was six years of age. The second pregnancy resulted in a macerated stillbirth that was delivered near term. An autopsy by the Pathology Department of the University of Minnesota was done. The findings on the stillbirth were those of erythroblastosis fetalis. This third pregnancy was normal and full term. Serological tests on the mother's blood were negative for syphilis. The delivery was easy. At birth, the baby weighed six and a quarter pounds and was jaundiced. The placenta was not remarkable. A Rytz test on the cord blood was negative for syphilis. The baby remained jaundiced and expired approximately fourteen hours after birth.

Postmortem examination was carried out seven hours after death. The body was well developed. There was a generalized deep jaundice but no edema. The liver and spleen were greatly enlarged. The liver weighed 230 grams and the spleen, 30 grams. The sternal bone marrow was deep red in color. The brain showed extensive postmortem changes but no discoloration. The remaining gross examination showed no departures from normal. Microscopically, the findings were those of erythroblastosis. Postmortem blood smears showed large numbers of normoblasts with a leukemoid reaction in the granulocytes. The sternal bone marrow showed hyperplasia with many nucleated red blood cells and considerable myeloid immaturity. The sinusoids of the liver were dilated and filled with nucleated red blood cells. Some areas showed large nests of normoblasts. There were persistent areas of hematopoiesis scattered throughout the pulp of the spleen. The splenic sinuses were filled with nucleated red blood cells. The follicles had largely disappeared. The remaining organs showed nothing of note. The anatomical diagnosis was erythroblastosis fetalis of the icterus gravis type.

The following serological studies were carried out. The anti Rh typing serum used was obtained from Philip Levine of Newark, New Jersey. It was prepared from a mother who had given birth to an erythroblastotic infant and the agglutination titre was high. Levine[6] stated that the serum was the standard variety of typing serum and by its use 85 per cent of the population reacted positive. The technique used was the warm agglutination method as recommended by Levine. Positive and negative controls were used. These controls were

TABLE III. SEROLOGICAL STUDIES OF REPORTED CASE OF ERYTHROBLASTOSIS

	Rh Status	Blood Group
Father	Rh positive	B
Baby	Rh negative	B
Mother	Rh negative	A
	Mother's serum contained no anti Rh antibodies	Mother's serum contained anti B agglutins at dilution of 1 to 26

red blood cells from the laboratory staff who are known to be Rh positive and Rh negative. The reactions in all cases were definite and read with no difficulty. The results were as follows. The father was found to be Rh positive and the mother, Rh negative. The baby was Rh negative. Anti Rh agglutinins could not be demonstrated in the serum of the mother as her serum failed to agglutinate the cells of an Rh positive individual of the same blood group. The father and baby were both group B (Landsteiner). The mother was group A (Landsteiner). The mother's serum agglutinated the baby's red cells at a dilution of one to twenty-six. This is a normal agglutination titre for typing serum. Table III is a summary of the serological findings.

Discussion

The fact that the baby in this case proved to be Rh negative would not allow this case of erythroblastosis to be accounted for on the Rh theory. It is recognized that objections can be raised against the serological findings in this case as several bloods inactive with a particular typing serum have been reported to react positive with another serum. The existence of recently reported subdivisions in the Rh agglutinogen makes the matter more complicated. Philip Levine[6] stated that the human typing serum used in this case can be called the standard Rh 1 variety as 85 per cent of the population were found to react positive by its use. Levine[5,8] found a second type of anti Rh serum to give 72 per cent positives. A mixture of types one and two gave 87 per cent positives. A third type of anti Rh serum also gave 87 per cent positives. This third type of serum was called Rh 12 as the results obtained were the same as those from a mixture of types one and two. In addition, he has found a few human sera from mothers of erythroblastotic infants which give divergent reactions with rare bloods, indicating the possible existence of still further varieties of the Rh agglutinogen. Levine[6] suggested that the baby in this case might fall in the 2 per cent missed by the use of the standard, Rh 1, typing serum. The use of animal serum in infants would appear unreliable as Fisk and Ford[2] found immunized guinea pig serum to show 100 per cent positives when tested against red cells of infants. In adults, they found this same serum to give comparable results with human serum. The lack of anti Rh agglutinins in the serum of the mother in this case is of little importance as the anti Rh titre of the mother's serum in erythroblastosis may fluctuate greatly. This is why it is difficult to secure reliable typing serum from humans. Levine, Burnham, Katzin, and Vogen[8] found anti Rh antibodies present in only 50 per cent of the mothers who had given birth to erythroblastotic infants when their sera were tested within two months after delivery.

The fact that the baby and mother in this case belonged to different blood groups would offer a basis for isoimmunization, although the anti B titre of the mother's serum was not elevated. An objection to this is the fact that in 80 per cent of the population, the A and B agglutinogens are not confined to the red blood cells alone but are also present in various fluids and tissues of the body. This multitude of antigens would protect the red cells from injury by any intrauterine antibodies formed by the mother. However there remains 20 per cent of the population where the A and B agglutinogens are found only in the red blood cells. In the latter group, especially if an elevated antibody titre is present a theoretical basis for isoimmunization exists. Levine[5] is hard pressed to explain certain cases of erythroblastosis on the Rh factor. He suggests the possibility of another factor, Hr, being involved in those cases where the mother is found to be Rh positive. The subject of isoimmunization becomes extremely involved and complicated when one realizes that Wiener[10] by means of five agglutinogens, A 1, A 2, B, M, and N and the two common varieties of anti Rh agglutinins recognizes seventy-two distinct types of human blood.

Conclusion

The majority of cases of erythroblastosis fetalis can be explained on the Rh antigen-antibody mechanism. Other known and unknown factors related to isoimmunization may be involved in those cases that fail to meet the requirements of the Rh theory. The field of isoimmunization is a

(Continued on page 1089)

CLINICAL-PATHOLOGICAL CONFERENCE

MINNEAPOLIS GENERAL HOSPITAL

A. J. Hertzog, M.D., and S. V. Loisness, M.D.
Pathologists

Presentation of a Case

A-43-1797

DR. PETIT: This case is that of a fifty-eight-year-old female who was first admitted to the Medical service on September 25, 1942, complaining of shortness of breath and marked weakness. Her past history was essentially negative except for some recurrent nosebleeds at the age of thirty-eight. Her present illness began approximately one and one-half years before admission to the hospital. At that time she had an upper respiratory infection with gastro-intestinal symptoms. Her physician found her anemic; her hemoglobin was 60 per cent (Sahli). She was treated with iron and liver, and the hemoglobin rose to 70 per cent. She did not return to her physician until a year later and approximately three months prior to her admission here. She was complaining of weakness and dyspnea on exertion. The hemoglobin at that time was about 30 per cent. A gastric expression showed free hydrochloric acid. She was given injections of liver extract three times a week, and, failing to improve, was referred to the hospital.

Physical examination on admission showed her to be somewhat obese and very pale. The tongue showed atrophy of the papillæ along the sides. The heart was enlarged to the left. There was a systolic murmur. present over the apex. The spleen was not palpable. The liver was moderately enlarged. The pulse was 88 per minute, temperature was normal, and blood pressure 140/70. There was slight edema of both ankles. There was no peripheral adenopathy. The hemoglobin was 20 per cent (Sahli); red blood count, 800,000; white blood count 3,000. The differential was made up of neutrophiles 27 per cent, lymphocytes 69 per cent, and monocytes 4 per cent. The color index was 1.25. Reticulocytes 1.3 per cent; platelets, 62,000. The mean corpuscular volume was 131.1 cubic microns. The average mean diameter of the red cells was 9.3 microns. The icterus index was 4. No immature lymphocytes were observed. There was a right shift of the neutrophiles. The red cells were macrocytic, showed moderate anisocytosis, and a slight degree of polychromatophilia.

Attempts were made to transfuse the patient, but due to marked autoagglutination, the selection of a suitable donor was unsuccessful. Her serum proteins were studied and found to be elevated. Total plasma proteins were 9.21 grams with 4.81 grams of albumin, 1.62 grams of globulin, and 2.78 grams of fibrinogen. She developed areas of ecchymosis around the venapuncture wounds of her arms. Bleeding time varied from four to ten minutes and coagulation time was within normal limits. The prothrombin level was normal. Despite adequate antianemic therapy, she failed to improve and expired on October 8, 1943.

DR. HERTZOG: This is a case of severe macrocytic anemia that failed to respond to therapy. The peripheral blood picture suggests a failure of maturation of all the elements of the bone marrow, namely, red blood cells, granulocytes, and platelets. Does any one wish to venture a diagnosis?

DR. PETERSON: The blood picture to me would appear more like a severe stage of Addisonian pernicious anemia rather than an aplastic anemia. Wilkinson has described a type of pernicious anemia that fails to respond to therapy and suggested the name achrestic anemia.

DR. HERTZOG: The gastric expression showed free hydrochloric acid. I think one should be extremely hesitant in making a diagnosis of pernicious anemia when free hydrocloric acid is present, although a few authentic cases have been reported. Dr. Schleicher studied the blood smear and did a bone marrow aspiration. We will ask him to tell us what he found.

DR. SCHLEICHER: I might as well say at the start that I failed to interpret the hemopathology correctly. This is a very interesting case and I learned a lot from it. This is the highest mean corpuscular diameter that I have ever seen in a case of the type presented here. In addition to the refractory macrocytic anemia, we have a reduction of platelets, a lymphocytosis which was neither absolute nor was the nature of the lesion apparent from the morphology of the cells. No ruptured lymphoid cells were observed in the blood smear. We were only able to aspirate a small piece of tissue which, on histologic examination, was composed of mature lymphocytes, some neutrophiles, fibrin threads, macrophages and erythroid cells. No megaloblasts were observed in the smear preparation. Another unusual phenomenon was the unusually high plasma proteins. I have never seen this in uncomplicated pernicious or aplastic anemia. My conclusions were severe macrocytic anemia, not hemolytic in character, atrophy of the bone marrow organ, and liver injury.

DR. HERTZOG: On what basis do you make a diagnosis of liver damage?

DR. SCHLEICHER: The uniformity of size of the macrocytes and the presence of many macrophages filled with siderin and lipoid granules in the sternal marrow. These findings are usually associated with liver disease of long duration. An extract of the liver is being made.

STUDENT: Was the spleen ever palpable?

DR. PETIT: The spleen was not palpable; however, the liver appeared enlarged.

Autopsy

DR. PETIT: The body was that of a pale obese female weighing approximately 190 pounds. There was a slight generalized pitting edema and a slight jaundice. The liver weighed 1,900 grams. It was enlarged, pale brown, and had a nutmeg appearance. The spleen was small, weighed 120 grams, and showed nothing of note. The heart weighed 480 grams. The myocardium showed the tabby-cat appearance we find in severe anemias. The lungs showed nothing other than slight edema. The kidneys were enlarged, the right weighed 300 grams, and the left, 250 grams. They were smooth, and had a pale brown color. The lymph nodes were not enlarged. The yellow bone marrow of the shaft of the femur was replaced by a bright red marrow.

DR. LOFSNESS: The diagnosis in this case rests upon the microscopic sections. Sections of the liver show large collections of lymphocytes around the portal spaces. There is considerable hydropic degeneration and necrosis of the cells in the central portion of the lobules. Hence, Dr. Schleicher is right when he says there was considerable liver damage in this case. This may be an explanation for the macrocytosis. Lymphocytes around all of the portal spaces is the pattern found in lymphatic leukemia. We were unable to explain the changes in the central portions of the lobules. The kidneys show the picture of leukemia with large collections of lymphocytes scattered throughout the cortex. Sometimes this process can be so profuse as to cause uremia. The bone marrow from the femur shows solid sheets of small lymphocytes as seen in chronic lymphatic leukemia. The erythroid and myeloid elements are crowded out. If this pattern had been obtained on sternal aspiration, the diagnosis could have been established. The spleen shows a diffuse increase in lymphocytes scattered throughout the pulp. This is not the usual picture of lymphatic leukemia in the spleen as the follicles are not enlarged. A section of a lymph node shows diffuse hyperplasia of the lymphoid elements. However, some of the normal architecture of the node remains intact. No conspicuous immaturity of the lymphoid cells could be made out. The mucosa of the stomach is infiltrated with many lymphocytes and plasma cells, and the gastric glands are atrophic. This is the picture of chronic gastritis rather than of leukemia of the stomach.

DR. HERTZOG: This case shows how difficult it is at times to establish the diagnosis of lymphatic leukemia. This case falls in the category of aleukemic leukemia, which term is often used to describe those cases where no immaturity is demonstrable in the peripheral blood. We occasionally see hyperproteinemias and macrocytic anemias in leukemia. The atrophic gastritis was apparently not severe enough to produce an achlorhydria. The atrophic gastritis and liver damage offer an explanation for the macrocytosis.

Anatomical Diagnosis: (1) Chronic lymphatic leukemia; (2) chronic atrophic gastritis; (3) macrocytic anemia.

CASE REPORTS

SUCCESSFUL TREATMENT OF EXTREME ALLERGY TO BEE BODY AND BEE VENOM

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The patient is a woman of forty-three, married, has five children, and is in general good health. At the age of seventeen she married an apiarist. She had frequent accidental bee stings, but never had any reactions until in 1923.

In 1923, a sting under a ring resulted in an asthmatic type of cough, and severe hives. The next reaction was in 1925, when a sting caused a sudden swelling of the upper eyelids. In 1935 the family moved their business of beekeeping from Texas to Minnesota. In the fall of 1935, she noticed symptoms which made her believe she was developing hay fever. But as soon as the bee season opened in the early spring of 1936, she found that as soon as any of the men who were working with the bees entered the house, she immediately started to wheeze, cough in an asthmatic way, had coryza, lacrimation, and at times developed large wheals about the face, neck and arms. This became more severe as the season advanced, and continued until the bees were disposed of and taken into the south for the winter.

When the season opened in 1937, the symptoms became nearly unbearable; and when an accidental sting occurred, she suffered intensely. In June of 1937, a near fatal episode occurred. In spite of precautions, she was accidentally stung by a bee. Within a few minutes after the sting, the patient was unconscious. On my arrival at the scene, a few minutes after the sting, she appeared very blue, the face was puffy, she was entirely unaware of her surroundings, the pulse could not be felt, and the blood pressure was so feeble that it could not be determined. The entire body was covered with massive wheals, some over 12 inches in diameter. It was impossible for her to take in any air, as the glottal region was either so swollen, or in such spasm, that breathing was not possible. The only evidence of life was a futile expansion and contraction of the thoracic barrel, in an effort to breathe. The patient appeared like a body that had been submerged in water for several days. Repeated doses of adrenalin and strychnine, and heat to the body brought the desired results, and in a short time, she was conscious. Allergy symptoms were present for several days.

It was apparent then that she had to leave the family for the entire honey making season and hope to avoid a bee sting in every contact of life, or that her husband would have to change his life-long occupation, or that some medical help would have to make it impossible for such reaction to recur. It did not seem possible that a reaction of any more severity could have any result but death.

TABLE I

Date 1939	Dosage Minims	Dosage Dilution	Reaction
June 13	1	1:10,000,000	Severe
15	4	1:5,000,000	Severe
17	3	1:1,000,000	Moderate
19	4	1:500,000	Moderate
22	1.5	1:100,000	
24	2.5	1:100,000	Mild
26	4	1:100,000	
28	6	1:100,000	
30	9	1:100,000	
July 3	14	1:100,000	Mild
5	21	1:100,000	Moderate
7	3.5	1:10,000	Moderate
10	5	1:10,000	
12	8	1:10,000	
15	13	1:10,000	
18	20	1:10,000	
20	30	1:10,000	
22	4.5	1:1,000	
24	8	1:1,000	
26	14	1:1,000	
28	24	1:1,000	
31	30	1:1,000	
Aug. 2	8	1:500	
4	14	1:500	
7	20	1:500	
9	25	1:500	
12	30	1:500	
19	20	1:500	
21	30	1:500	
23	40	1:500	

Adrenalin was given for the reactions June 13, 15 and July 5. Very mild hay fever symptoms followed the injection August 23.

TABLE II

Date 1939	No. of Stings	Data of Symptoms Following Stings
Aug. 26	1 sting	Symptoms as listed above
Sept. 2	1 sting (brief)	In 3 minutes pulse rose from 80 to 100 In 3 minutes face flushed, itching In 12 minutes blood pressure was 127/80. Coughed In 16 minutes pulse was 132, BP 108/60. Wheezed In 18 minutes pulse was 144 In 21 minutes pulse was 124 BP 108/60 In 40 minutes pulse was 116, BP 114/64 In 60 minutes pulse was 90, BP 115/76. Felt better
Sept. 9	1 sting (brief)	Reactions similar, but less severe
Sept. 16	Full sting	Reactions mild
Sept. 23	2 full stings	Reaction moderate, but pelvic pain as in advanced labor. Lasted 65 minutes.
Sept. 30	2 full stings	Very moderate symptoms

During the season of 1938, she remained cloistered in the house to avoid any danger of a sting, and suffered from spring until frost with intense hay fever, and a cough that made more than a few consecutive moments of sleep impossible.

One troublesome symptom that had occurred very frequently since the first reaction in 1923 was irregular uterine bleeding. Her periods were absolutely irregular, growing longer in duration, and at times hemorrhage was profuse. She had been advised by several physicians to have a hysterectomy. During the summer of 1936, she bled almost constantly. I could find no uterine abnormalities, except a very moderate subinvolution; not sufficient, I felt, to warrant the symptoms.

In considering treatment, I wrote the Mayo Clinic, and they replied that they had no experience in the problem but referred me to Dr. Robert L. Benson, of Portland, Oregon. Dr. Benson sent me a reprint of his study made following care of a similar, but apparently less severe, case.[2]

I asked the Arlington Chemical Company of Yonkers, N. Y., to prepare an extract of whole bee body, which they did in dilutions of one part to 100,000 dilutent; one to 10,000; one to 1,000; and one to 500. They also sent me a vial of ground bee body for dermal test. Just to confirm the already obvious facts, I made a very superficial scratch about one-eighth inch long on the forearm, and placed a drop of water solution of bee body on the scratch. Within a minute, she had a large wheal on the spot, and developed hay fever symptoms.

Before starting treatment I ran a series of scratch tests for possible reactions to pollens common in this part of the country; namely, for elm, cottonwood, thistle, orchard grass, small and giant ragweed, amaranthus, blue grass and prairie sage. All were negative except elm, which was markedly positive. She said she had what she considered a cold every year in the spring, corresponding to the time when pollen is given off from the elm. Yearly observation since has confirmed that she has hay fever during the brief period that the elm pollenizes. The brevity of this annual period made it seem unimportant to trouble with desensitizing for elm.

I started subcutaneous injections of the bee extract on June 13, 1939, giving 1 minim of 1 to 10,000,000 dilution. She reacted with a moderate asthmatic cough, wheezing, severe facial wheals, agonizing itching, and vaginal bleeding which started within one-half hour of the injection, and lasted one day. The discomfort was severe enough to warrant administering adrenalin. Injections were continued, as indicated in Table I until August 23, 1939, when the last extract was given, with a dosage of 40 minims of 1 to 500 dilution. She showed a very mild reaction. With each injection she developed a scant vaginal bleeding which lasted from a few minutes to a full day. After reactions from injections subsided, she always fell into a deep sleep for about one hour. The onset of vaginal bleeding was always accompanied with pelvic pain, which she described as feeling like true labor pains.

I had exhausted the supply of bee extract and, since the desire was to make it possible for her to be able to take actual stings with safety and moderate comfort, I felt it was time to try an actual sting. On August 26, 1939, I asked her to bring a bee to the office. This was seventy-four days after the beginning of treatment. I loaded a syringe with adrenalin, as neither the patient nor myself was very confident of what was about to happen.

When a bee stings, the entire venom mechanism of the bee's body is cast off with the stinger, and an ejaculatory movement in the mechanism gradually propels the venom into the victim. The stinger should not be grasped between the fingers when pulled out of the skin, as this squeezes in more venom; rather the stinger should be brushed off in the direction opposite to which

it is thrust in. My intention was to allow the bee to insert his stinger and brush it off at once, thus giving her as small a dose of venom as possible. The bee did not behave according to ritual, and, though the patient thought she felt a prick, no stinger was cast off. Finally the sting was consummated, the sac brushed off, and within two minutes three wheals appeared on her arm, indicating that she had actually been punctured in three places, thus probably getting much more venom than I had desired. In ten minutes her face flushed, and there was generalized pruritis. The conjunctivæ became severely engorged, and sneezing and coughing were severe. Edema developed in the eye lids and lips, and woodiness invaded the skin of the extremities. I gave her 3 minims of 1:100 adrenalin. Blood pressure before the sting was 118/70, and remained the same until twenty-five minutes after the sting, when it dropped to 80/55. Pulse rose from 80 to 130 within fifteen minutes. Vaginal bleeding started almost at once. Within one hour general symptoms subsided, and she went to sleep. Stings were repeated as listed in Table II at about weekly intervals, with reactions gradually becoming less.

The patient felt that reactions were becoming of a mild enough nature so that she could take them herself at home. We returned to the one-sting procedure. Within one more month, she was free from reactions of any sort after a full sting. This was four and one-half months after the beginning of treatment. She also had no allergic type of reactions when about those of her family who had been working among the bees.

The problem then was to determine how permanent this desensitization would prove. She experimented with varying intervals between stings, and has found now, nearly four years after the procedure, that during the winter she does the best and is free from reactions, if the stings are taken every two weeks. During the actual bee season, she finds it best to take them every week. This spring, due to labor shortage, she is needed to work directly with the bees, and is getting along without any discomfort. When stings were spaced three or four weeks apart, she occasionally experienced a mild discomfort. Accidental stings do not trouble her.

Benson[2] made a detailed study after treating an apiarist, using material prepared from water-soluble stinger protein and body protein. His patient is reported as having a mild residual hay fever upon contacting his bees. In his paper, he considered the problem under three heads: (1) complications caused by venom, itself; (2) those caused by plant pollens carried by bees; (3) allergy caused by allergens inherent in bees.

Considering venom, itself, it has been shown that the venom of all hymenopteræ have much in common, both chemically, and in clinical manifestations.[5,6] My patient has never experienced any unusual reaction from other hymenopteræ, such as wasps. It was shown by Langer[10] that there is no formic acid in bee venom, and he believed it to be protein free. Flury[8] considered it to be a protein-free material. Arthus[1] and Lyssy[11] both call the poisonous component of bee venom a proteotoxin. Benson[2] caused contraction of the virgin guinea pig uterus by injecting very minute quantities of diluted venom. Cushney[4] and Wells,[12] as well as others, describe the histamine-like reactions of various venoms, and point to the fact that adrenalin is the natural antagonist of histamine.

As to pollen being carried by bees, and hence the bee only serving as a vehicle, it was proved by Benson[2] that the stinger is usually pollen free. Gibb[9] reports a case that he ascribes to bee-borne pollen, but he is not convincing, as his patient had no history of sensitivity previous to a bee sting, and to nothing aside from the sting at a later date.

Considering the inherent allergen in bees, it seems a suggestion might be entertained that both bee body and bee venom might carry some common denominator that is capable of sensitizing a person. The case here reported reacted badly both to stings and to persons or material that had been in the environment of bees.

An interesting report is made by Fisher[7] on treatment of bee allergy by using whole bee extract. Braun[3] reports a patient having labor-like pains, but describes no vaginal bleeding.

Conclusions

1. The study of only one case can do little more than stimulate lines of thought.

2. Bees and their venom may have a specific factor not common to all hymenopteræ, as this patient's reaction was specifically to bees.

3. It is possible to attain desensitization in cases of bee allergy by graduated injections of whole bee extract, followed by carefully spaced bee stings.

4. Desensitization is not necessarily permanent, and may require a continuous follow-up of a routine of administration of venom through bee stings.

5. Since bee stings protect the patient from reaction both to venom, and to any dust or substance thrown off from the bee body, it would appear that there is a common substance present both in the venom and in the body.

6. I am told by apiarists that there is some prevalence of allergy symptoms among those who are keepers of the bee. It might be well to include the bee test in efforts to diagnose the etiological factor in case of sensitivity, especially in rural areas where many farmers cultivate a few hives of bees.

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COMMON DUCT REPAIR BY MEANS OF A VITALLIUM TUBE

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INJURY to or destruction of the common duct may follow cholecystectomy, ulcerations from stones, or infection of the ducts. To restore the duct to normal function has been a great problem of the surgeon.

The ordinary benign stricture may be dilated and a T tube inserted and left in place for weeks or months. Many of these will require no further treatment. Some of them will promptly become constricted again. Resection of the stricture with end to end anastomosis may give good results. A rubber tube may be passed through the duct into the intestinal tract and be allowed to remain there permanently.

The proximal end of the common duct has been transplanted into the duodenum, stomach and jejunum. When the greater part of the common duct is gone and an external biliary fistula exists, the fistula has been dissected out and transplanted into the intestinal tract. A long tube through the duct into the intestine may give rise to a secondary infection from the intestinal tract. Without the tube or something to keep the duct patent, strictures usually recur at the sight of anastomosis. No existing method of surgical treatment of these conditions has been eminently satisfactory.

Pearse[2] has suggested the use of a vitallium tube buried in the duct at the sight of anastomosis or stricture to be left there permanently. The use of vitallium steel plates in bone work established the fact that vitallium is practically inert in the tissues.

In February 14, 1941, Pearse reported five cases treated by burying a vitallium steel tube in the tissues for relief of common duct strictures. Previously rubber tubing had been used for this purpose but was not considered practical for permanent use. Cases have been cited in which rubber was known to have functioned satisfactorily for six years but as a rule the fear has been expressed that it would rot in a rather short period of time.

The tube used by Pearse was made with an internal diameter of 5 mm. and a length of 4 cm. The edges were flared slightly to aid in retaining it in place.

Pearse recommended that this tube be used only in the cases which could not be otherwise satisfactorily treated. One of his cases reported one year after operation seemed satisfactory.

Case 1.—The first case in which I used this tube was a very unusual one. The patient was a female, forty-three years of age, a school teacher. She said she had had her gallbladder drained about ten years previously. At that time she had been deeply jaundiced, had had clay-colored stools and much bile in the urine.

On December 15, 1941, the gallbladder was explored.

Fig. 1. Vitallium tube in common duct. Stomach and duodenum filled with barium.

It was completely filled with two large stones and had apparently ulcerated into the duodenum in two places. This functionless, apparently, dead gallbladder was removed and the openings in the duodenum repaired. A careful search revealed no common duct below the site where the cystic duct had been ligated and severed. Our conclusion then was that at the previous operation the gallbladder had been anastomosed to the duodenum and when the gallbladder became blocked there was no channel to carry the bile into the duodenum.

The proximal stump of the common duct was then pulled down to the duodenum and the two were anastomosed over a rubber catheter. With the exception of some pancreatic and bile drainage everything seemed to go well for about two weeks. Then for some reason the patient again became jaundiced, had clay-colored stools and other definite signs of complete blockage of bile to the intestine.

Shortly before this time Pearse's vitallium tube had been on exhibition at the American College of Surgeon's meeting in Boston. Something had to be done to relieve the obstruction here. Before exploring the patient again I got one of these vitallium tubes. On exploration, the rubber tube seemed to be still in place and the anastomosis holding quite well. Apparently the rubber tube had become blocked by the bile salts. Since the rubber tube had become blocked in such a short period I felt that the vitallium tube might become blocked in the same manner, so I left the rubber tube in place and put the vitallium tube in beside it. Bile began to appear in the stool and normal function seemed to be restored. Drainage from the wound continued for a

Presented before the Minneapolis Surgical Society, December 3, 1942.

long time. Pancreatic juice in the drainage was evident from the skin erosion. To prevent further skin destruction two catheters were inserted into the wound. Through one catheter a solution consisting of one part 1/10 normal hydrochloric acid (U.S.P.) and two parts strained beef broth was instilled by the gravity, drip method. Through the other tube the water suction pump carried away the fluid from the wound. The wound finally closed and the patient is apparently well with both rubber catheter and the vitallium tube in the common duct. She began her work as a school teacher three months after the operation and is apparently having no digestive or other disturbance now. This was done about one year ago.

Some time after this patient recovered, Dr. Donald, assisting Dr. Walters, at the Mayo Clinic, called attention to a very ingenious method of caring for the pancreatic fluid escaping from the wound. A small, standard sputum cup was obtained and the bottom cut off. The cup was then strapped to the wound so that the fistula opened in the middle of the cup. A thick ointment composed of 50 per cent glycerine and 50 per cent koalin was applied to the inside of the cup and to the skin adjacent to the fistula, and the fluid aspirated from the cup at hourly intervals. This method seemed much more convenient for the patient and the nurse than the method we had used.

Case 2.—A man, fifty-six years of age, had had his gallbladder removed six years previously. Soon after his cholecystectomy he became jaundiced and showed definite symptoms of obstruction to the common duct. The common duct was explored and found to be completely shut off at the site of the previous operation. The duct was opened and a T tube inserted and left in place for two or three months. The tube was then removed, the wound closed and the patient had no trouble for six years. He then became jaundiced, had clay-colored stools and all the symptoms of a complete obstruction of the common duct.

March 17, 1942, the common duct was again explored. The stricture extended down to the duodenum. A forty-day catgut suture was put around the upper end of the tube just below the phlange to hold it in place. The common duct was closed as nearly as possible and the wound closed about a split tube drain. Again we had some pancreatic drainage and skin excoration. This was treated as before described. The patient recovered promptly and has had no trouble since.

As Pearse has stated, this procedure should be preserved for cases that have failed wtih other methods.

This type of tube has not been used long enough to determine its real value. So far it seems to serve the purpose well.

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REINFECTION WITH PNEUMOCOCCUS MENINGITIS

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ALTHOUGH many reports have appeared on clinical and experimental studies of reinfection in pulmonary pneumococcal infections,[1,2,3] relatively little is known as to the nature of the immunity in pneumococcal meningitis. Previously, this would have been an academic problem because of the exceedingly high mortality. In fact, recovery from the first infection was uncommon enough to justify case reports.[4,5,6,7] With the advent of sulfonamide therapy, the mortality has dropped somewhat. It may now become possible to study reinfections with pneumococcus meningitis to compare the immunity in this condition with that of the pulmonary form.

We are reporting an instance of a reinfection with pneumococcus meningitis occuring within six months of the first infection. As far as we can ascertain, it is the only case of reinfection with spontaneous pneumococcus meningitis reported in the medical literature.

L. S., a thirty-four-year-old white man, first entered a private hospital on October 9, 1942 with a history of coma lasting for twenty-four hours. The onset was sudden. The patient was found unconscious at home when his wife returned after a few hours absence. Lumbar puncture at this hospital showed the following: initial pressure 440 mm., dropping to 200 mm. after 15 c.c. of cloudy fluid was removed. The fluid contained 1,000 leukocytes per cu. mm., 95 per cent of the polymorphonuclear type. The patient was given 5 grams of sodium sulfapyridine intravenously, and was transferred to the County Hospital on October 10, 1942. Here we found him irrational and maniacal. He was examined under sodium pentothal (250 mgm.) anesthesia. He displayed marked neck rigidity, positive Brudzinski and Kernig signs, and a temperature of 103.6° F. rectally. The spinal fluid contained 4,000 cells per cu. mm., predominantly polymorphonuclear leukocytes. The spinal fluid sugar was 68 mgm., chlorides 680 mgm., total protein 375 mgm. per 100 c.c. A bacteriological diagnosis of type 25 pneumococcus meningitis was made culturally. On the day of admission, the patient was given 5 grams of sodium sulfathiazole intravenously followed by 2 grams of sodium sulfadiazene every four hours beginning October 11. On this day he was also given 100,000 units of type 25 pneumococcus antiserum intravenously. On October 12, a further dose of 100,000 units was given. Marked improvement was noticeable immediately; the temperature fell by lysis reaching normal on October 25.

The patient was readmitted March 30, 1943, with a history of headache and vomiting for six hours, followed by the loss of consciousness for five hours. He was restless and uncontrollable. His temperature was 105° F. rectally, and he exhibited positive Brudzinski and Kernig signs. Because he was difficult to handle, the patient was given 7.5 grains of sodium amytal intravenously after which a lumbar puncture was done. The

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spinal fluid contained 24,000 cells, predominantly polymorphonuclear. The Pandy was 4 plus. On the day of admission 5 grams of sodium sulfapyridine were given intravenously followed by two doses of 2 grams of this drug, with the final administration of 2 grams of sodium sulfadiazene intravenously every four hours. Cultures of the spinal fluid revealed a type 10 pneumococcus. Type 10 antiserum was given (150,000 units) on the second day of illness. On the fourth day improvement was apparent and the patient was then placed on oral chemotherapy. His temperature became normal on the fifth day and he was discharged as cured on April 12, 1943.

Summary

We have reported a case of reinfection with pneumoccocus meningitis six months after the first infection. A different type of pneumonia was present with each attack, type 25 and type 10. No otitis was evident, but the patient gave a history of a skull fracture two years before the first illness. The patient recovered both times after a combination of sulfonamide and antiserum therapy.

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REDUCTION OF HOSPITAL INTERNSHIP TO NINE MONTHS AS A WAR MEASURE

The Surgeon General of the Army and the Surgeon General of the Navy have now definitely agreed to a reduction of the internship to nine months, with deferment of one-third of the interns who hold reserve commissions for a second nine-month period in order that they may serve as assistant residents and one-half of these for a third nine-month period to serve as hospital residents.

The Hospital Committee and the Directing Board of the Procurement and Assignment Service as well as the Council on Medical Education and Hospitals of the American Medical Association believe that this program will provide better balanced and more adequate resident staffs for hospitals than the present program of twelve months' internship with no commitment on the part of the Army and Navy for further deferment of active duty for any interns who hold commissions. It will also eliminate the waste of medical manpower which has occurred in many hospitals during the three months overlapping of intern services occasioned by the maintenance of twelve-month internships with students graduating from medical schools and beginning internships at nine-month intervals. It will provide the armed forces with a considerable number of young medical officers three months earlier than under the present program.

From the educational point of view further reduction in the length of internships is regrettable but the exigencies of the situation seem to justify it, particularly since the educational value of the internship is adversely affected at the present time by the excessive number of interns in many hospitals during the overlapping period.

It is recognized that the reduction of the internship to nine months will raise problems of licensure in certain states. The Directing Board of the Procurement and Assignment Service hopes, however, that as a war emergency measure these states will accept nine months of internship plus three months of military service as meeting the requirements for licensure.

Upon request of the Directing Board of the Procurement and Assignment Service of the War Manpower Commission and by direction of the Executive Committee of the Federation an inquiry has been submitted to each state board as follows:

1. Will your Board approve a decrease in hospital internship from twelve to nine months for the duration of the war?

2. Will your Board accept subsequent service in the armed forces for those physicians who leave their internships at the end of nine months at such time as they may apply for license in your State?

3. Will your Board accept a continued training in civilian hospitals from the ninth to twelfth month for those physicians who are physically disqualified and, therefore, do not enter the armed forces?

It is hoped to publish in the October BULLETIN the replies and expressions of opinion regarding this matter from the several state boards of the United States.

It will be noted in the Educational Number of *The Journal of the American Medical Association*[1] that an internship is required for licensure in twenty-two states and the District of Columbia, Alaska, Hawaii and Puerto Rico. Six schools in the United States and four in Canada also require an internship for graduation. In Delaware and Pennsylvania the internship requirement has been reduced to nine months for the duration of the war.—*Federation Bulletin*, 29:257, (Sept.) 1943.

HISTORY OF MEDICINE IN DODGE COUNTY

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(Continued from November issue)

Dr. Henry T. Turner (1837-1913) was born in the State of New York on July 16, 1837, the son of Henry Turner and Betsy McBride Turner.[255] Events of his early life are thus far unknown, but in 1862 he was graduated from the old Eclectic Medical College of Pennsylvania at Philadelphia.[40] He came to Kasson in October of 1875, and advertised that he treated chronic diseases and that he had cured fourteen patients suffering from asthma. He opened an office in Minneapolis in 1882, but soon returned to Kasson, where in 1883 it was reported[256] that he had found a "cure for consumption." He was licensed to practice medicine in Minnesota on December 31, 1883, by exemption,[40] and in 1884 and 1885 he was health officer of Kasson. At some date not now known he was married to Miss Abbey Potter, of Mower County, Minnesota. He probably was a Republican in inclination, for in April of 1884 he was chairman of a Republican party caucus of some sort.[257] He was one of several physicians who presented bills to the county for medical services given to the poor in 1884,[258] and in April of 1885 he was reappointed health officer of Kasson.

Early in 1889 Doctor Turner went to Walla Walla, Washington, where he resided for some years. By the year 1906 he was living in Seattle, and a few years later he became resident physician at the Washington State Veterans' Home at Port Orchard. He died in that institution on July 16, 1913, of "senile decay and cystitis" of several years' duration.[255,259] So far as is known, Doctor Turner never was a member of the Minnesota State Medical Society, although he may have been a member of the old Minnesota State Eclectic Medical Society, as Doctor Lee and Doctor Kermott were.

Dr. Curran Winfield Higgins (1849-1926), as has been said, practiced medicine for a while in Concord in 1876, soon after he had been graduated from medical college. He was born in Hebron, Jefferson County, Wisconsin, on September 16, 1849.[260] At the age of nine years he was brought by his father and mother to Minnesota, to a farm in Dodge County. The young man was educated at the old seminary in Wasioja and in the public schools. He spent the year 1870-1871 teaching school, and in October of 1872 entered the University of Minnesota. In that year he was married to Miss Retta E. Stockwell, of Fairpoint, in Goodhue County.[260] During his second year at the University of Minnesota Doctor Higgins studied medicine under the venerable dean of homeopathic medicine in Minnesota, Dr. William Huntington Leonard (1825-1907) of Minneapolis.[127] In the fall of 1874 Higgins enrolled in the Hahnemann Medi-

cal College and Hospital of Chicago, from which he was graduated on February 14, 1876.[100] He then returned to Concord for a very short time, and next removed to Corning, Iowa, where he stayed for three years.[260] The Territory of Dakota attracted him in about 1879, and he settled in Brookings in what is now South Dakota, where he established a general medical practice and conducted a drug store.[260] He was licensed to practice medicine in the Territory of Dakota on April 28, 1886.[100] Doctor Higgins seems to have stayed in Brookings for about ten years. In 1889 he returned to Minnesota, and associated himself with the medical department of the old Northwestern Life Association. He was licensed to practice medicine in Minnesota on October 4, 1889.[210] He lived at first at 3124 James Avenue South in Minneapolis; but by 1892 he was associated with the National Life Association of Hartford, Connecticut, with his office at 49 South Third Street in Minneapolis. In 1895 he was appointed state manager for an eastern life insurance company,[260] and on December 3, 1897, he was elected a vice president and medical director of the National Mutual Life Association of Minneapolis,[261] which later became the Northwestern National Life Insurance Company of Minneapolis. In 1898 Doctor Higgins became secretary and treasurer of the Minneapolis Savings Bank.

Doctor Higgins was connected with the Northwestern National Life Insurance Company until March 1, 1902, on which date he resigned.[261] He stayed in Minneapolis, however, engaging in field work for the company until November 1, 1903, at which time he severed all connections with the life insurance company.[261] Thereafter he engaged in the private practice of medicine. In 1906 he had an office at 302 Hulet Block (Seventh Street and Hennepin Avenue) in Minneapolis, and a residence at 2128 Dupont Avenue North. In 1907 he moved to Maple Plain, and at some time in the twenties he went to California. He died of pulmonary edema and acute cardiac dilatation at Monrovia, California, on November 11, 1926.[262] He was interred in the Monrovia Mausoleum.

Doctor Higgins was a member of the Masonic fraternity, and of the Minneapolis Commercial Club while he lived in that city. He had joined the Baptist church at Wasioja in 1869, and in Minneapolis he attended the Calvary Baptist Church. One of his close friends in Dodge County was Dr. Chauncey Almer Kelsey (1847-1918), who came from the same town in Goodhue County as that in which Doctor Higgins' wife had lived. Both men attended the Groveland Seminary at Wasioja, and Doctor Kelsey, as will be shown, married the daughter of the principal of the seminary, Dr. L. B. Allen.

Dr. Warren Burlingham Steere (1832-1900) was said[263] to have been born in Hartwick, Otsego County, New York, on December 9, 1832, although there is reason for suggesting that the year was 1842, as will be shown. He was the son of Elisha Steere and Fanny Burlingham Steere.[263] On his father's side Doctor Steere was related to the famous Roger Williams (1607-1684). The nature of Doctor Steere's early schooling is not known, but he was graduated from the old Eclectic Medical College of Philadelphia on January 22, 1862,[100] where it is thought that he studied dentistry as well as medicine. He then settled in DeWitt, Iowa, where he remained for about fifteen years. He came to Dodge Center in the spring of 1877, where he seems to have practiced dentistry rather than medicine. He was never licensed to practice medicine in Minnesota.[40] Doctor Steere stayed in Dodge Center until about 1881, in which year he removed to the Territory of Dakota, settling in what is now Pierre, South Dakota. For a while he practiced dentistry in and about Pierre; then he went to Chicago for additional medical training. On March 24, 1884, he

was graduated from the old Bennett College of Eclectic Medicine and Surgery,[264] and on April 28, 1886, he was licensed to practice medicine in the Territory of Dakota.[100] At that time he was living in Pierre. On November 23, 1886, Doctor Steere was licensed to practice medicine in Iowa, receiving Iowa Medical Certificate No. 928. At that time he reported that his place of residence was Des Moines, and he gave his age as forty-four years, which would indicate, as stated previously, that he had been born in 1842. It was said[263] that Doctor Steere specialized in obstetrics, and that he was proficient in this branch of medicine; but he was also, of course, a general practitioner. In about 1890 Doctor Steere was called to Des Moines to become a professor in the old Iowa Medical College, Eclectic,[263] but the town in South Dakota in which he was living at the time of his departure for Des Moines is not known. It may have been Goodwin, which was the home of his son. It was reported[265] that Doctor Steere died in the spring of 1900, from the effects of a fall complicated by pneumonia. Where he died it is not known, but the widow[263] of Doctor Steere's son believed that he died in Des Moines. The Division of Vital Statistics of the Iowa State Department of Health,[266] however, has no record of a certificate of death for Doctor Steere.

Dr. John Lewis Martin (1806-1885) was born in Albany, New York, on September 17, 1806, but nothing is known of his parents or his early education, although it has been said[267] that for a while he served as a clerk in a store. Neither is it known that he was a regularly graduated physician, but his granddaughter[267] reported that he had a certificate that had been issued to him by some institution or organization in New York State. This may well have been a license to practice medicine from a medical society, for in the early part of the Nineteenth Century in New York it was medical societies which possessed the power of licensure, as the secretary[88] of the New York State Board of Medical Examiners has reported. While Doctor Martin was still in Albany he was married to Miss Emeline J. Berghes,* who was a music teacher. Doctor Martin also was an ordained minister of the Wesleyan Methodist Church; when and where he was ordained it is not known. At some time not now ascertainable, Doctor Martin and his wife moved to Valparaiso, Indiana, and remained there for about five years. He then journeyed to what is now Grand Meadow, Minnesota, with his wife and children, making the long trip by ox-cart.[267] There he built a log house, in which he conducted the first neighborhood school of the surrounding country. It was said[267] that in about 1866 Doctor Martin was of great service to his community during the epidemic of diphtheria which raged in Southern Minnesota that year. At some time in the early seventies Doctor Martin moved with his family to Wasioja in Dodge County, so that his children could be educated at the old Groveland Seminary, which by this time had come into the hands of the Wesleyan Methodist Church. His granddaughter[267] said that he also lived and practiced medicine in Jackson, Minnesota; but she did not say when this was. Another granddaughter,[268] who as a girl lived with Doctor Martin and whose husband drove Doctor Martin's team for him, said that at one time he had lived in High Forest in Olmsted County.

Doctor Martin is known to have practiced homeopathic medicine in Wasioja, and it was recorded,[83] as previously said, that in 1878 he had assisted Doctor Flood of Mantorville and Doctor Garver and Doctor Ranson of Dodge Center at a necropsy. At various times in 1879 and 1880 Doctor Martin preached ser-

*Doctor Martin did not care for the name "Emeline," so his wife changed it to "Elizabeth." The name "Emeline J. Martin," however, was used on her tombstone.

mons in the Wesleyan Methodist Church at Wasioja.[68] He seems to have been in active practice to within a year of his death, as is indicated in the following paragraph from the Wasioja news notes in the *Dodge County Republican* of January 24, 1884:

> On Friday evening last [January 18, 1884], the family of J. L. Lang were made sick by eating a pie in which tartar emetic had been used, by mistake, instead of tartaric acid for flavoring. Doctors Martin and Flood assisted in restoring them to a normal condition.

Doctor Martin died in Wasioja, probably of cardiac disease, on September 22, 1885. According to the sexton[269] of the Wesleyan Methodist Church of Spring Valley, Dr. and Mrs. Martin were buried in the Frankford Township cemetery, a few miles from the villages of Spring Valley and Grand Meadow.

Dr. Chauncey Almer Kelsey (1847-1918) was born in Potsdam, Saint Lawrence County, New York, on December 27, 1847, the son of Wilson Kelsey and Jane Chittenden Kelsey.[246] As a boy Doctor Kelsey was brought to Cherry Grove Township in Goodhue County by his parents, probably in 1855.[270] The boy was educated in the local public schools and also at the Groveland Seminary at Wasioja in Dodge County. His son[71] described Doctor Kelsey as a poor farm boy who educated himself largely by his own ingenuity and labor: "He was always cheerful and optimistic, delighted in scheming great schemes some of which came out well and some of which didn't. He never got away from his love of farms and lands and horses." Doctor Kelsey was well known in the vicinity of Wasioja long before he became a physician, and before he settled in Concord in August of 1877,[69] to remain for a short period. He had entered the old Chicago Medical College (Northwestern University Medical School), from which he had been graduated in 1875, and in the same year he had been married to Miss Isabella Prince Allen, daughter of Dr. L. B. Allen, principal of the Groveland Seminary at Wasioja.[71] Where Doctor Kelsey practiced immediately after his graduation from medical college it is not known, but in August of 1877, as stated previously, he located in Concord. Later in the same month he visited Kasson with his good friend, Dr. Curran W. Higgins (1849-1926). By the year 1880 he was in Oakwood, in the Territory of Dakota,[271] but he was never licensed to practice medicine in that territory.[72,100] Later he was in Chicago, but there is no evidence that he was licensed to practice medicine in Illinois.[73] He was licensed to practice medicine in Minnesota in March of 1899, by affidavit,[210] and at the time he was living in Minneapolis. On June 23, 1899, he was elected to membership in the Minnesota State Medical Society, at the thirty-first annual session of that body in Minneapolis.[272]

At the thirty-fourth annual session of the Minnesota State Medical Society in 1902 Doctor Kelsey delivered a paper on "Plaster-of-Paris Casts,"[273] and in it he spoke of his "experience of twenty-seven years" in medicine and surgery. At this session, also, he introduced the following resolution,[274] which was tabled:

> WHEREAS, It is a well-known fact that the use of tobacco is injurious, especially when the habit is formed in youth, and
>
> WHEREAS, Every father desires that his boys shall escape the evil injuries of the habit; therefore be it
>
> RESOLVED, That we, the members composing the State Medical Society of Minnesota, object to being put on record as favoring the use of tobacco, and request that in the future the word "smoke" never be used in connection with our socials.

Probably no one at the meeting realized that almost a half century previously, when the old territorial Minnesota Medical Society met at Saint Paul on July 23, 1853, Dr. Alfred Elisha Ames (1814-1874) had introduced a somewhat similar resolution in which "the sale of intoxicating drugs and medicines" was condemned by the society.[170] This resolution had been adopted.[170]

Doctor Kelsey was always keenly interested in the proceedings and discussions at various sessions of the Minnesota State Medical Society, and he entered into the activities of the organization with energy and insight whenever he attended a meeting. He was willing to discuss almost any sort of paper read before the society, and his remarks as set down in various volumes of the *Transactions* indicate that he must have enjoyed the practice of medicine. In about April of 1906 he removed to Boyero, Colorado,[275] and he was licensed to practice medicine in that state on October 1, 1907, receiving License No. 5457.[246] Toward the latter part of his life, his son[71] said, Doctor Kelsey gradually relinquished his interest in medicine and turned to real estate. He died of carcinoma of the liver at the Seaside Memorial Hospital, Long Beach, California, on April 27, 1918.[262]

Dr. John Flood (1850-1918) was a curious man of seemingly unbounded energy and ingenuity. He was a Kerry man, born at Tarbert in Kerry County, Ireland, on June 24, 1850.[276] His mother died when he was an infant, and he was brought to the United States as a boy of twelve years by his father. Young Flood was reared in the city of Chicago, which in medicine of the era was famous for such men as Dr. Nathan S. Davis (1817-1904), founder of the American Medical Association,[277] Dr. Daniel Brainerd (1812-1866), founder of the Rush Medical College,[277] Dr. William Heath Byford (1817-1890), founder of the Woman's Hospital Medical College of Chicago,[277] and Dr. William B. Herrick (1813-1865), first president of the Illinois State Medical Society.[277] On January 26, 1873, at the age of twenty-three years, Doctor Flood was graduated from the old Bennett College of Eclectic Medicine and Surgery of Chicago, where he may have known Dr. Nereus M. Cook (1852-1927), who founded the eclectic *Minnesota Medical Mirror* at Cambridge, Minnesota, in 1881.[127] Doctor Cook was a member of the class of 1874.

Doctor Flood was married to Miss Matilda E. Johnson of Chicago in 1876,[276] and their daughter, Allie Elizabeth Flood (Mrs. A. W. Hannah of Chicago) was born there on May 30, 1878. Doctor Flood was licensed to practice medicine in Illinois on October 31, 1877.[73] Doctor Flood settled in Mantorville in Dodge County in July of 1878. "Dr. John Flood, of Chicago, has hung out his shingle at the Hubbell House,*" it was recorded in a Mantorville item of the *Dodge County Republican*,[278] "and proposes to settle here, if the situation proves favorable. We certainly need a *resident* physician." In August of 1878 Doctor Flood bought or leased the old school house* at Mantorville with the intention of turning it into a "Hygienic Institute," probably so that he could meet the offerings of Dr. D. B. Geil of Mantorville, who had opened a "Hygienic Institute" of his own in the town. In September of 1878 a large steam vat and steam engine for the institute were unloaded from railway cars, and a little later Doctor Flood's institute was opened to the public. It would seem that he was successful in causing Doctor Geil to leave Mantorville, for that physician was in Kasson after the first of the year, 1879. In January of 1882 Doctor Flood formed a partnership with Dr. J. Clark Bliss (1846-?) of Wisconsin.[99,279]

*These structures are still standing in Mantorville (1943).

The partnership did not last long.[111] In 1883 Doctor Bliss moved to Claremont. Doctor Flood bought a house in Mantorville,[280] and soon was busy in extracting bullets, setting fractured extremities, attending patients stricken with scarlet fever (often with Dr. Jasper Bedient of Mantorville), and occupying himself with his stable of race horses. In the summer of 1883, for instance, he sold his pacer, "Joe Johnson," for $600. He was licensed to practice medicine in Minnesota on September 12, 1885, receiving License No. 1099.[40] He was the preceptor of Dr. Guy Philander Corwin (1855-1929) of Wasioja, as will be shown, and he seems to have been well enough known in Chicago for the old *Chicago Medical Times* to publish this paragraph about him in 1886:

> Doctor Flood, of Minnesota, says that he has almost universally found tenderness on pressure over the fifth cervical vertebra in choreic cases. In these he applies the ether spray over the tender spot, and follows that with a mild counter-irritant. Then with a judicious use of tonics and ergot he has generally been successful in the treatment.

In 1888, ten years after he had come to Mantorville, Doctor Flood terminated what seems to have been a profitable practice to go to the Rush Medical College in Chicago. During his absence Dr. Samuel H. Van Cleve (1843-1912), who was city physician in Minneapolis at the time, came to Mantorville to maintain Doctor Flood's practice for him. When Doctor Flood returned to Mantorville in 1889, he sold his practice there to Doctor Van Cleve, and moved to Kasson. While he was at Kasson he was elected to membership in the Minnesota State Medical Society, on June 21, 1889.[282]

Doctor Flood was a stockholder in the old Minnesota College Hospital of Minneapolis,[276] founded in 1881 by Dr. Frederick A. Dunsmoor (1853-1930), Dr. Amos Wilson Abbott (1844-1927) and others. Those interested in the history of this pioneer medical college are referred to Dunsmoor's interesting report[92] of 1909 and to the announcement of the opening of the school in one of the first issues of the *Northwestern Lancet*.[91] In the spring of 1891 Doctor Flood sold his practice in Kasson to Dr. Charles O. Wright,[148] and left Dodge County to enter the publishing business in Omaha, Nebraska.[282] In May of 1891 he issued the first number of a publication called the *Illustrated World of Art*.[283] At some later time he returned to Chicago, where he died during the great epidemic of influenza of the first World War, on September 28, 1918, of pneumonia.[284]

Dr. Francis Alfred Comfort (1841-1915), as previously stated, was in Concord for a short time in the summer of 1878, at which time it was said that he was a physician "of some 12 years' experience."[82] He was born in Beamsville, Ontario, Canada, on November 22, 1841,[205] but the names of his parents are not known. Records of the Alumni Association of the University of Michigan indicate that Doctor Comfort was graduated from the University of Michigan Department of Medicine and Surgery in 1866,[205] but Doctor Comfort himself told the Division of Licensure and Registration of the Iowa Department of Health that he had been graduated from the aforementioned institution on March 30, 1865.[264]

Doctor Comfort was thirty-seven years old when he came to Concord, and in view of the very short period of his stay there, it seems obvious that he was trying out a location. He was never licensed to practice medicine in Minnesota, but on September 22, 1886, he was licensed to practice medicine in Iowa, receiving Certificate No. 557.[264] At the time he was living in Logan, Iowa. It seems probable that he practiced medicine in Nebraska, also, for he was licensed to

practice medicine in that state on March 4, 1897, receiving License No. 2147.[285] Doctor Comfort died of heart disease at Logan, Iowa, on January 21, 1915.[205,286]

Dr. Francis Reuben Woodard (1848-1926) was born in Madison, Lake County, Ohio, on July 15, 1848, the son of Joseph S. Woodard and Frelove M. Baker Woodard.[287] In December of 1858 his parents decided to emigrate to the new state of Minnesota. The father journeyed to Chicago to purchase a stock of drugs, and the mother and her children traveled as far as La Crosse, Wisconsin, by railway. From that town they reached Rochester by sleigh. The father, meanwhile, had acquired his supply of drugs in Chicago, purchased a horse and buggy there, and had driven the entire distance to Rochester, where he speedily opened the first pharmacy in the town. It was said that he sold the first quantity of kerosene to be used in Minnesota.[287] Young Woodard had attended public schools in Painesville, Ohio; in Rochester he completed his primary education while he was assisting his father in the prescription room of the pharmacy. In 1869 he entered the University of Michigan, where he spent two years in literary courses and one year in the study of law.[287] After an intervening period which was spent in Rochester he entered the University of Michigan in 1875, to study medicine for one year. In 1876 he matriculated at the Rush Medical College of Chicago, from which he was graduated in 1876. He settled very soon in Claremont in Dodge County, and was elected a member of the Minnesota State Medical Society on June 21, 1881, at the thirteenth annual session of the society.[288] Elected to membership with him at this session were such men as Dr. Charles S. Bigelow (1845-1931), who was to succeed Doctor Woodard at Claremont within the year; Dr. William Alexander Jones (1859-1931), for years editor of the *Northwestern Lancet* and the *Journal-Lancet;*[289] and Dr. Amos Wilson Abbott (1844-1927), notable Minneapolis surgeon who founded Abbott Hospital in Minneapolis in 1902,[290] helped to found the Minnesota Pathological Society,[291] conducted the first cystoscopic examination in Minneapolis, was the first in that city to utilize nitrous-oxide anesthesia,[92,290] and helped to found the old Minnesota College Hospital in Minneapolis in 1881.[92] Two members of the committee which examined Doctor Woodard's credentials were Dr. Jay Owens (1852-1890), who founded the *Northwestern Lancet* at Saint Paul in October of 1881;[289] and Dr. William W. Mayo (1819-1911) of Rochester, father of Dr. William J. Mayo (1861-1939) and Dr. Charles H. Mayo (1865-1939).

Doctor Woodard was licensed to practice medicine in Minnesota on October 11, 1883, under Certificate No. 115.[40]

In 1881 Doctor Woodard decided to move to Minneapolis. His practice at Claremont was taken over by Dr. Charles Sumner Bigelow (1845-1931), whom he had known during student days at the University of Michigan. In Minneapolis Doctor Woodard became a successful and respected practitioner. He served for ten years as a commissioner of the Minneapolis Board of Charities, and for six years as president of this board. He was attending physician to the Asbury Hospital and consulting physician to Saint Mary's Hospital and the Lutheran Deaconess Hospital, as well as gynecologist to the Minneapolis City Hospital.[287] He was a member of the American Medical Association, Minnesota State Medical Association, Hennepin County Medical Society and the Minnesota Academy of Medicine. For many years he maintained his residence at 2104 Park Avenue in Minneapolis, and in social activities devoted his interests to such groups as the Minneapolis Athletic Club and the Masonic order. He was a member of the Park Avenue Congregational Church.

Doctor Woodard died at Saint Augustine, Florida, on March 29, 1926, at the age of seventy-eight years.[292] He had spent forty-seven years in the practice of his profession, forty-five of which had been spent in Minneapolis.

"Dr. Woodard carried on an active practice as a general practitioner and surgeon from 1881 to the time of his death," it was written. "He was associated at one time with Dr. J. Warren Little and later with Dr. William H. Newhall."[292]

Dr. Frank H. Garver (1857-1881) was born in Wasioja on January 20, 1857, the son of Dr. James A. Garver and Eliza Miller Garver. He was tutored largely by his parents in Wasioja, and this elementary education was augmented by his attendance of the old seminary at Wasioja. It was said that at an early age he became intensely interested in chemistry and physiology, an interest which his father no doubt encouraged. He next attended the University of Minnesota for one year, after which he transferred to the Medical Department of Butler University of Indianapolis, from which he was graduated as a physician on February 25, 1880. He then returned to Dodge County to practice medicine for a few weeks with his father in Dodge Center, but on March 19, 1880, he settled in Goodwin, Territory of Dakota. At some time in the latter part of February, 1881, he fell a victim to fever of an indeterminate origin, and he died at Goodwin on March 11, 1881, not even a year after he had located there. He was buried in the Garver lot in the little pine-covered cemetery on the steep bluff above the Zumbro River at Wasioja, within sight of the old Wesleyan seminary wherein he had first been inculcated with the desire to become a physician. Today only the crumbling yellow stone walls of this frontier educational institution are standing.

Dr. Charles Sumner Bigelow (1845-1931) was of a family distinguished in the service of the United States. He was first cousin to the prominent Abolitionist, United States Senator Charles Sumner (1811-1874) of Massachusetts, and his father, Dr. Thomas Sumner Bigelow, was a Vermonter, a graduate of the Jefferson Medical College of Philadelphia, and a jeweler and inventor of considerable acumen. He invented such useful devices as the Foster clasp tug buckle, the "Little Giant" cane-crusher, a tin double-seamer and others which are in common use today. Doctor Bigelow's mother, Clarissa Jacobs-Warner of Elmira, New York, was the daughter of a physician.

Dr. Charles Sumner Bigelow was born at Middlebury (now the fourth ward of Akron), Ohio, on December 15, 1845. He attended the public schools at Lake Mills, Wisconsin, and at the age of eighteen years, on June 29, 1864, he enlisted as a private soldier in Company F of the Third Wisconsin Infantry Regiment of Volunteers. He marched with General Sherman to the sea in 1864, and was discharged on January 9, 1865, because of disability sustained in service.

Returning to Wisconsin, the young man attended and was graduated from Milton College. For a while he taught school in Illinois, but in 1870 he began the study of medicine under the preceptorship of his brother, Dr. Edward Elisha Bigelow (1841-1926), then of Milan, Michigan, but later of Owatonna, Minnesota.

In 1873 Doctor Bigelow was graduated as a physician from the University of Michigan, and he established himself in practice in Illinois, where he remained until 1880. After a year of postgraduate instruction at Rush Medical College in Chicago, he came to Claremont in Dodge County in 1881. He was elected to membership in the Minnesota State Medical Society on June 21, 1881,[288] in company with Dr. Francis R. Woodard (1848-1926), who was about to leave

Claremont to settle in Minneapolis. In May of 1883 Doctor Bigelow was elected district clerk of Claremont,[293] and on December 31, 1883, he was licensed to practice medicine in Minnesota.[40]

Doctor Bigelow made several trips to the Territory of Dakota,[119,294,295,296] but the hardships of rural medical practice in the severe winters of the eighties in Minnesota induced him to move to Kansas in 1884.[297] There he settled in Ames. "His departure is a loss to the community," the *Kasson Vindicator*[298] remarked, in a Claremont item.

In Kansas Doctor Bigelow practiced his profession for about six years. He worked amidst fearful difficulties, however, for during the latter part of the eighties, as is well known, Kansas was visited by searing droughts. Doctor Bigelow therefore left Kansas to return to Minnesota in 1890, and this time he settled in Dodge Center[147] at the request of Dr. James A. Garver. Doctor Garver retired and turned over his practice to Doctor Bigelow, who remained in active practice in Dodge Center until his own retirement in 1912.

"Dr. C. S. Bigelow, who has recently located here, has rented and moved into the house formerly owned by the railroad company near the depot," it was observed[147] in October of 1890. "He will be pleased to receive calls from all who desire his services."

This tenure was interrupted in April of 1898, when Doctor Bigelow removed to Claremont, his original location, where he built an office building and re-established a practice. He brought Dr. William Henry Tefft (1873-1938), who had just been graduated from the University of Michigan, to maintain his practice at Dodge Center while he (Doctor Bigelow) was at Claremont. The Claremont venture proved to be unsatisfactory, and in the spring of 1899 Doctor Bigelow returned to Dodge Center and Doctor Tefft took over Doctor Bigelow's practice at Claremont. Doctor Tefft left Claremont on December 20, 1899, to go back to his old home at Belmont, New York.

In 1912 Doctor Bigelow moved to Madison Lake, Minnesota, where he practiced actively until a new physician could be obtained. His son, Dr. Charles Edward Bigelow (1879-), had in the meantime taken over his father's practice in Dodge Center, where he now is (1943).

The senior Bigelow was health officer of Dodge Center, president of the board of education of that town, and a member of such organizations as the Dodge County Medical Society, which he helped to reorganize in 1905, the Minnesota State Medical Society, and the American Medical Association. He was also a member of the Masons, Knights of Pythias and the Grand Army of the Republic. He was known as a quiet man, short of stature, who had a perfectly impassive face which never betrayed his emotions, even in the most intense situations. He was a competent, well-informed and tireless physician and surgeon.

Doctor Bigelow moved to Two Harbors, Minnesota, after he left Madison Lake, and removed to California in 1926, where he lived in Lynwood. He died there on April 13, 1931, at the age of eighty-five years, twenty-eight of which had been spent in professional services to the people of Dodge County.[299]

(To be continued in January issue)

References will appear at the conclusion of this article.

President's Letter

VALEDICTORY

No great satisfaction is to be derived from retrospects. The lessons drawn from history and experience are soon forgotten. Twenty-five years after the termination of the "War to End All Wars," we find ourselves involved in the most destructive war in all recorded history, and we must confess that that great effort resulted in a colossal failure, and the opportunities that it presented were lost. On a small scale, individual experience is similar and most of us must admit that, in comparison with our capabilities and opportunities, our accomplishments are far from satisfying. However, one can take some comfort in the thought that all development comes through a great number of small increments, and no one is a complete failure who has been able to make some small contribution to some good cause.

These considerations will lead the members of our Association to the correct conclusion that, in this valedictory letter, the President lays claim to but very little of the credit for the things that the Association has accomplished during the past year. He speaks simply as a member of the Association who has had the privilege of a particularly intimate contact with its inner workings.

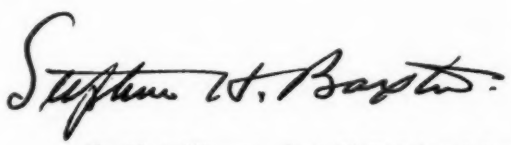
The Association is under especial obligation to those of its membership and employed staff who represented it at the State Capitol during the session of the Legislature. Without prejudice to other men who gave freely of their time and effort, I would like to single out for special mention Dr. Sogge, Mr. Rosell and Mr. Brist. They are men of whom the Association may well be proud. The results that they accomplished were a tribute to the respect in which they are held by the members of the Legislature. Largely due to their influence and efforts, some principles were reaffirmed and strengthened which are essential to a free, unregimented medical profession.

Members of our Association took a leading part in the establishment of the new Council on Medical Service and Public Relations of the American Medical Association, and one of our members, Dr. Adson, is a member of this Council. The expressed purposes and aims of this Council should convince any fair-minded person that the medical profession is fully alive to its responsibilities as guardian of the health of the American people, that it is progressive, recognizes its obligation to Society and that it is actively seeking the means for improving medical service to all the people in ways that are in harmony with the American principles of free enterprise and encouragement to individual initiative.

The future holds no more important task for our Association, it seems to me, than that of making Minnesota, to the utmost degree possible, medically self-sufficient, not only in remedial medicine and surgery, but in preventive medicine. It ought to be impossible for anybody to sustain the charge that there are people in Minnesota who need and want modern medical care but are unable to obtain it. It is within the power of Minnesota agencies and the medical profession of Minnesota to provide such service. There should be but little need or excuse for the intrusion of any Federal Agency, Administration, Bureau or Service into Minnesota to provide medical care, or even preventive or public health measures, for its people. With the people of Minnesota so provided, our Congressmen and Senators would be armed with the strongest possible arguments against any present or future Wagner-Murray schemes.

I wish to conclude this last letter to the Association with an acknowledgment, to all its members, of the great honor and privilege which I have enjoyed this year as their President. In return for that honor I hope that I have been able to contribute something to the advancement of the Association. I wish to thank the official family of the Association, the Council, and the Chairmen and Members of Committees for many acts of kindness and courtesy—yes, and charity, too. A word of thanks is small compensation for the debt that I owe the Executive Secretary and his staff for help on many occasions, but I hope that they will accept it as a sincere expression of deep obligation.

To my successor I yield this President's Page with keen anticipation of his inaugural message which will appear here next month, and with my best wishes for a profitable and successful year for himself and the Association.



President, Minnesota State Medical Association

Editorial

CARL B. DRAKE, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

PENICILLIN

THERE is no doubt but that the year 1929 aside from being remembered as the beginning of the greatest financial depression in history will be outstanding in medical history. In that year the English investigator, Fleming, noted that a mold contamination of a culture of staphylococcus had caused the death of contacted colonies. Though many types of mold exist, this original one isolated by Fleming is the one used in the preparation of the drug given the name of penicillin.

Apparently non-toxic, this material obtained from the culture medium used in growing the mold is proving itself marvelous in overcoming a variety of infections. It is effective clinically in infections due to the streptococcus hemolyticus, staphylococcus, pneumococcus, gonococcus, and treponema pallidum, and doubtless other organisms not so far determined. Unfortunately penicillin has not proven efficacious in the treatment of endocarditis due to the streptococcus viridans.

The output of pharmaceutical houses in ever-increasing amounts has so far been made available only to the armed forces and a few institutions for further clinical investigation. It is hoped that it will be obtainable for civilian use before many more months.

Recent medical literature has contained numerous articles on the subject. Before the Medical Forum in St. Paul last month Dr. W. E. Herrell of the Mayo Clinic gave a most impressive presentation of experience so far with this new drug. Patients from infancy to old age with severe staphylococcus blood stream infection and doomed according to all past medical experience showed sterile blood cultures after twenty-four hours of continuous administration of penicillin. Infections which failed to respond to sulfa drugs have yielded to penicillin. A case was reported of a sailor incapacitated for ten months from gonorrhea whose infection was refractive to the sulfa drugs responding promptly to this new drug.

The recently reported work of Mahoney opens an entirely new field for penicillin therapy. It appears from his work that penicillin is an exceedingly effective agent against both experimental and clinical syphilis. Further work must be done to determine whether or not penicillin is actually spirocheticidal. In the treatment of primary syphilis, dark field examinations were reported negative after seven hours of treatment. If confirmed, this is a far-reaching contribution.

Penicillin has been found to be sensitive to heat and cold, and is destroyed in a too acid or too alkaline medium. While the drug in large amounts is non-toxic, 40,000 units given by continuous intravenous injections over a twenty-four hour period has been found to be efficient in the most severe blood stream infections. There is no doubt but what the continuous intravenous administration of penicillin is the most effective means of maintaining a constant level of the antibacterial agent in the blood stream. The intermittent intramuscular administration probably requires larger amounts of penicillin than are necessary for the intravenous drip method. Further, if a three-hour interval occurs between injections, there will occur a period of at least one to one and one-half hours during which time little, if any, penicillin is present in the patient's blood. This is due to the rapid disappearance of penicillin from the blood and to its rapid excretion in the urine. Approximately 50 to 60 per cent of the penicillin administered may be recovered from the urine of patients. Because of its excretion in the urine, it should prove of great value in the treatment of urinary infections due to susceptible organisms.

The antagonisms existing between microörganisms has long been known. It would seem the only reason why this world has not been overrun by bacteria is this existing antagonism, and that many bacterial forms present in good mother earth constitute a valuable function in destroying infected matter buried in the ground.

Valuable as the sulfa drugs have proven, their undeniable toxicity constitutes some drawback to their use. The demonstration of the effective action of penicillin in infections which fail to respond to sulfa drugs and its lack of toxicity, in-

dicate that it will prove even a greater boon to mankind than sulfa drugs, invaluable though they have proven to be.

NEUBURGER—THE MEDICAL HISTORIAN

DECEMBER eighth marks the seventy-fifth birthday of the dean of medico-historians, Max Neuburger, whose works and researches are well known to everyone interested in the history of medical science.

Born and raised in Vienna, he attended the University there, receiving degrees of M.D., and Ph.D. in history. Although he specialized in neurology and psychiatry, his interest in the history of medicine soon reached such heights that he gave up private practice and habilitated as *privatdozent* in the history of medicine at the University of Vienna in 1898. Six years later he became "extraordinary" and in 1917 "ordinary" professor.

His original and profound historical researches, the creation and development of the Institute of Medical History at the University of Vienna, and his accomplishments as a teacher of the History of Medicine soon gained Professor Neuburger fame as a medico-historian. His works cannot be herein listed in detail. This is being done in journals devoted to the history of medicine. Although Neuburger's historical researches touched practically every phase of this enormous field, they were concerned mainly with the history of neurology and neuropsychiatry and of the Vienna School. His first substantial publication, *The Historical Development of the Experimental Brain and Spinal Cord Physiology before Flourens* (1897), is a work that could be produced only by a man trained as a neurologist and a historian. He published many other works elucidating the history of neurophysiology, neuropathology, and psychology. His writings on the early psychologist Ernst von Feuchtersleben earned the praise of the greatest medico-historians. Neuburger became internationally known through his important studies of the neurophysiology of Swendenborg, whom "he brought closer to most scientists than anybody before him"—as a Viennese historian expressed it.

The second phase of medical history that fascinated him was the history of the Vienna medical school from its earliest development to the present. Numerous are his books and articles dealing with the various "Vienna schools," and with their notable leaders, including van Swieten, de Haen, Stoll, Johann Peter Frank, Rokitanski, Skoda, Semmelweis, Türk, and many others. Neuburger is undoubtedly the greatest authority on this large and important chapter of the history of medicine. In this group belongs Neuburger's edition of Auenbrugger's *Inventum Novum* (1929), which includes a facsimile of the first edition published in 1761; the most important French, English and German translations of this work; and an excellent introduction.

His opus magnum is his *History of Medicine* in two volumes (1906-1910), which was translated into English and published by the Oxford Press (1910-1925) with an introduction by no less important a medical leader than Sir Wm. Osler, who described the book as "particularly useful to the English and American student—clearly written, not too exhaustive, and well and systematically arranged." It was acclaimed in every corner of the world. This, as well as other works, prompted Fielding H. Garrison to call Neuburger "easily the greatest philosophical historian of medicine."

His editing (with Pagel) of the *Handbuch zur Geschichte der Medizin* (1902-1905), the most complete and exhaustive encyclopedic work on the history of medicine, was a very important contribution. Other works that serve to illustrate the wide variety of his researches include: *The History of Antitoxic Therapy* (1901), *Medicine in Flavius Josephus* (1919), *The Healing Power of Nature* (1926), and *Theories on the Mechanism of Specific Nutrition* (1900).

Aside from being a great historian, Neuburger was an excellent teacher; he attracted pupils from every country in the world. His lectures were extremely interesting and his enthusiasm most contagious.

Neuburger created the Institute of the History of Medicine at the University of Vienna. It was located in the Josephinum, the building of the defunct Josephinian Military Medical Academy. He started it by contributing his own medico-historical library and collection. A thorough examination of this treasure house of medical history was one of the most satisfying experiences open to the student of medical history as well as to the physician.

Neuburger reaped many honors, and there is hardly a country in which he was not an honorary or corresponding member of learned so-

cieties. As late as 1935 he attended the International Congress of Medical History in Madrid as delegate of the University of Vienna and its medical faculty, and on this occasion he received an honorary degree at the University Alcala. His life, however, was not lacking in sorrows and difficulties, but thanks to his enthusiasm, he was able to weather periods of economic and emotional depression.

In recent years the political upheavals in central Europe made it impossible for him to remain with his once beloved university, and he accepted the hospitality of England, where he was elected an honorary member of the Royal Society of Medicine in 1939. For several years he has been connected with the Wellcome Historical Medical Museum. In spite of illness and a serious operation, his spirit, enthusiasm, and working capacity remained at the highest level, as is proved by his recently published *British Medicine and the Vienna School, Contacts and Parallels* (1943). This volume illustrates once more Neuburger's sincerity and his scientific honesty qualities, which gained recognition a quarter of a century ago in the motto on the *Festschrift* to his fiftieth birthday—*Vir integer scelerisque purus.* On this his seventy-fifth anniversary, Neuburger's pupils and friends all over the world congratulate him.

Ad multos annos!

ROBERT ROSENTHAL, M.D.

EDITOR'S NOTE: Appearing in this issue is a translation by Alfred Rosenthal, of an article entitled, "The Discovery of the Pulmonary Circulation of the Blood," by Max Neuburger.

ERTRON

AS a result of the appearance in the November *Reader's Digest* of an article by Paul de Kruif on the use of ertron in arthritis, physicians will be asked about the value of the preparation by patients suffering from various forms of this affliction.

From the tone of the article the uninformed individual might be led to believe that here is the long-sought solution of the arthritis problem. While it is true that the claim of 100 per cent cure, is not made, the impression is given that here is a remedy overlooked by the profession in general, and it has been left to de Kruif to tell the world.

The makers of ertron claim that it is irradiated ergosterol specially prepared by a new electric process. It is put out in capsules each containing 50,000 U.S.P. units of Vitamin D. It was on the market as far back as 1935, and has been offered to the profession with most extravagant claims. Of late the literature sent the profession has been more insistent, and has been accompanied by reprints in proof of its value.

The use of Vitamin D in the treatment of arthritis is not new. Many physicians have used it and have used this special preparation known as ertron with indifferent results. As far back as 1937 the Council on Pharmacy and Chemistry investigated the preparation, although the manufacturers had not submitted it to the Council.

In their refusal in 1937 to accept ertron for inclusion in New and Non-Official Remedies, the Council called attention to the danger of relying too much on improvement in subjective symptoms as reported by patients in estimating the value of a remedy used in a disease subject to remissions. At that time the critical examination of the reports of the value of Vitamin D in this treatment of chronic arthritis revealed little to warrant the belief that the beneficial effects claimed were specific and the Council deprecated the unwarranted exploitation of ertron to the profession. There is room for considerable doubt whether more recent experience with the drug warrants any change in its status.

MEDICAL CURRICULA

THE entire program of medical education has now been set up for a nine months' instead of a twelve months' period of training, beginning with the premedical course and ending with hospital residenceship. During the transition, confusion has taken place, in many instances, some hospitals having doubled their usual number of interns for a period of three months.

Medical students in the Reserve after completion of a nine months' internship will receive an additional three months' training before entering active service, six weeks of that time to be spent in a military hospital and the other six weeks in military training in a camp.

To provide for the need of hospitals for residents, it has been agreed that one-third of the graduating interns will be retained by the hospitals as residents for a second period of nine months, and half of the residents will be allowed to take a second nine months' period of hospital training as residents.

Although this rearrangement and shortening of the medical course is a war measure, it is possible that it may result in a permanent shortening of the medical course. It has been felt for some time that three and in some instances four months of summer vacation have been unnecessarily long. On the other hand, the intensity of the eight or nine months' study necessitates some vacation. Further, the long vacations enabled many students to earn their way through medical school. Doubtless some modification in the previous curricula could and will be made to advantage.

HOSPITAL INSURANCE

THE editorial entitled "The AHA and the AMA," which appeared in the October number of MINNESOTA MEDICINE, dealt with the controversy between the two organizations over the inclusion of medical service in some hospital service contracts. No stand was taken in the editorial, but an attempt was made to present both sides of the question. It was stated in the editorial that we would welcome a proposal which would help solve the problem.

In response to the editorial, we received three letters which are being reproduced under the heading, "Communications," in this issue, in the hope that the further light they throw upon the subject will be of value.

Most incorporated private hospitals employ the services of radiologists and pathologists, about half of the radiologists being compensated on a percentage basis, the other half on a salary or a salary plus percentage basis. The relation of these medical men to the hospital has been the subject of legal consideration on more than one occasion. Without going into the legal aspects of the subject to any great extent, it seems to be the general consensus of legal opinion that a radiologist so employed is an agent of the hospital, and the hospital, therefore, is a corporation in the practice of medicine. There is reason to believe, however, that the laws relating to the practice of medicine by corporations do not apply and were never intended to apply to hospitals. Otherwise, all such hospitals would be guilty of breaking the law. If the present method of compensation of medical men (and this is a legal question which we shall not attempt to settle) constitutes a violation of law, it should be possible to change the method of compensating them for their services, so that they would be acting as independent practitioners and not as agents of the hospital.

It is not only highly desirable but essential that hospitals shall not dispense the services of medical men. There is no argument as to whether radiologists and pathologists are medical men or not. They are.

Hospital service organizations provide insurance against hospital expense, and it is natural that some of these organizations, in order to make their contracts more attractive, should have included some x-ray and other laboratory service. Most have not done so. Those who have studied the subject are convinced that if the services of radiologists and pathologists are included in these contracts, there is no logical reason why the scope of such contracts could not be extended to include the services of other medical specialists. That is why the AMA House of Delegates took such a firm stand in opposing the inclusion of medical service, even of a limited sort, in Blue Cross contracts.

The suggestion made by Dr. Garland in his letter, which is among those being published, that a joint "medical-hospital" policy might be written which would furnish funds to defray the cost of diagnostic medical services and/or medical and surgical fees deserves consideration. After all, everyone is interested in devising ways and means of meeting the cost of catastrophic illness which generally requires hospitalization, the hospital expense being, however, only a part of the total.

AMERICAN MEDICAL ASSOCIATION

Council on Medical Service and Public Relations

A STATEMENT OF GENERAL POLICIES

Pursuant to carrying out the duties imposed on it by the House of Delegates, the Council has adopted the following general policies:

1. The Council on Medical Service and Public Relations recognizes the desirability of widespread distribution of the benefits of medical science; it encourages evolution in the methods of administering medical care, subject to the basic principles necessary to the maintenance of scientific standards and the quality of the service rendered.

It is not in the public interest that the removal of economic barriers to medical science should be utilized as a subterfuge to overturn the whole order of medical practice. Removal of economic barriers should be an object in itself.

It is in the public interest that the standards of medical education be constantly raised, that medical

research be constantly increased and that graduate and postgraduate medical education be energetically developed. Curative medicine, preventive medicine, public health medicine, research medicine, and medical education, all are indispensable factors in promoting the health, comfort and happiness of the nation.

2. The Council through its executive committee and secretary shall analyze proposed legislation affecting medical service. Its officers are instructed to provide advice to the various state medical organizations as well as to legislative committees concerning the effects of the proposed legislation. It shall likewise be the duty of its officers to offer constructive suggestions to bureaus and legislative committees on the subject of medical service.

3. The Council approves the principle of voluntary hospital insurance programs but disapproves the inclusion of medical services in those contracts for the reasons adopted by the House of Delegates at the 1943 meeting.

4. The Council approves voluntary prepayment medical service under the control of state and county medical societies in accordance with the principles adopted by the House of Delegates in 1938. The medical profession has always been very much opposed to compulsory health insurance because (1) it does not reach the unemployed class; (2) it results in a bureaucratic control of medicine, and interposes a third party between the physician and the patient; (3) it results in mass medicine which is neither art nor science; (4) it is inordinately expensive; and (5) regulations, red tape and interference render good medical care impossible. Propaganda to the contrary notwithstanding, organized medicine in general, and the American Medical Association in particular, have never opposed group medicine, prepayment or nonprepayment, as such. The American Medical Association and the medical profession as a whole have opposed any scheme which on the face of it renders good medical care impossible. That group medicine has not been opposed as such is evidenced by the fact that there are many groups operating in the United States which have the approval of the medical profession, and members of these groups are and have been officials in the national and state medical organizations. That group medicine is the Utopia for the whole population, however, is not probable. It may be and possibly is the answer for certain communities and certain industrial groups if the medical groups are so organized and operated as to deliver good medical care.

5. The Council believes that many emergency measures now in force should cease following the end of hostilities.

6. The Council believes that the medical profession should attempt to establish the most cordial relationships possible with allied professions.

7. There is no official affiliation between the American Medical Association and the National Physicians Committee. However, since it is the purpose of the National Physicians Committee to enlighten the public concerning contributions which American medicine has made and is making in behalf of the individual and the nation as a whole, it is the opinion of the Council that the medical profession may well support the activities of the National Physicians Committee and other organizations of like aims.

8. American medicine and this Council owe a responsibility to our colleagues who are making personal sacrifices to answer the call of the armed forces. Therefore, the Council expresses the desire to coöperate with the medical committee on postwar planning in order to assist our colleagues in reëstablishing themselves in the practice of medicine, and in the preservation of the American system of medicine.

MINNESOTA EVALUATION SEROLOGY STUDY

H. E. MICHELSON, M.D.
Chairman, State Serologic Committee
Minneapolis, Minnesota

A report of the interlaboratory evaluation study of serologic tests for syphilis, performed in the laboratories in Minnesota during 1941 and 1942 has been sent to the participating laboratories and the State Serological Committee.† The study was made in accordance with the recommendations of the State Serologic Committee with the assistance of the Minnesota Department of Health.

During 1941 there were thirty-six laboratories making serologic tests for syphilis, of which thirty-one elected to take part in this study. In 1942 there were forty-nine laboratories making the tests, of which forty-five tested blood specimens available in the interlaboratory series.

It is desired to express sincere appreciation to the pathologists and laboratory technicians in Minnesota for their coöperation in these studies, both in arranging for the testing of the blood specimens and the prompt return of the results obtained to the Minnesota Department of Health. Most of the laboratories have expressed a desire to continue the interlaboratory testing of blood specimens because they have found it a satisfactory check on reagents and technique. Certain laboratories have found the procedure helpful in selecting a technique which would give satisfactory results in their hands.

The facilities of the Minnesota Department of Health are available to those local laboratories desiring assistance with laboratory procedures. The interlaboratory evaluation study is being continued and the opportunity for comparing test performance throughout the year is available to all laboratories in this state.

We wish to thank Miss Jennie Schey of the Department of Dermatology, University of Minnesota Hospitals for her coöperation and assistance with the donors.

(Turn page for list of laboratories)

Members of the State Serologic Committee include, N. H. Lufkin, M.D., Francis W. Lynch, M.D., Paul A. O'Leary, M.D., Arthur H. Sanford, M.D., Lucy Heathman, Ph.D., M.D., (ex officio), R. R. Sullivan, M.D., (ex officio). Assisting the committee in this study was Margaret W. Higginbotham, D.Sc., Evaluation Serologist, Minnesota Department of Health, Division of Preventable Diseases.

†A copy of the report will be sent on request.

1941 LABORATORY	1942 LABORATORY	CITY	TYPE OF TESTS
Abbott Hospital	Abbott Hospital	Minneapolis	1
Ancker Hospital	Ancker Hospital	St. Paul	2
Bethesda Hospital	Bethesda Hospital	Crookston	1
———	Bratrud Clinic	Thief River Falls	1
———	Dr. J. C. Davis	Minneapolis	1
Deaconess Hospital	Deaconess Hospital	Minneapolis	2
Eitel Hospital	Eitel Hospital	Minneapolis	1
Fairview Hospital	Fairview Hospital	Minneapolis	1
———	Dr. E. L. Gardner	Minneapolis	1
Gillette Hospital	———	St. Paul	1
———	Glen Lake Sanatorium	Oak Terrace	1
———	Glenwood County Hospital	Glenwood	1
———	Immanuel Hospital	Mankato	2
———	Loretto Hospital	New Ulm	2
Mayo Clinic	Mayo Clinic	Rochester	4
———	Miller Memorial Hospital	Duluth	1
Miller Hospital	Miller Hospital	St. Paul	2
Minneapolis General Hosp.	Minneapolis General Hosp.	Minneapolis	2
Minneapolis Health Dept.	Minneapolis Health Dept.	Minneapolis	2
Minnesota Dept. of Health	Minnesota Dept. of Health	Minneapolis	7
Montevideo Hospital	Montevideo Hospital	Montevideo	1
Mounds Park Hospital	———	St. Paul	1
———	Naeve Hospital	Albert Lea	1
———	Nicollet Clinic	Minneapolis	2
———	Northwestern Hospital	Minneapolis	2
Redwood Falls Hospital	Redwood Falls Hospital	Redwood Falls	1
———	Rice Memorial Hospital	Willmar	1
———	Dr. Robert I. Rizer	Minneapolis	1
St. Barnabas Hospital	St. Barnabas Hospital	Minneapolis	1
St. Cloud Hospital	St. Cloud Hospital	St. Cloud	3
St. Francis Hospital	St Francis Hospital	Breckenridge	2
———	St. Gabriel's Hospital	Little Falls	1
St. John's Hospital	St. John's Hospital	St. Paul	1
St. Joseph's Hospital	St. Joseph's Hospital	Brainerd	1
St. Joseph's Hospital	St. Joseph's Hospital	Mankato	1
St. Luke's Hospital	St. Luke's Hospital	Duluth	1
———	St. Luke's Hospital	Fergus Falls	1
St. Mary's Hospital	St. Mary's Hospital	Detroit Lakes	1
St. Mary's Hospital	St. Mary's Hospital	Duluth	2
St. Mary's Hospital	St. Mary's Hospital	Minneapolis	1
St. Paul Health Dept.	St. Paul Health Dept.	St. Paul	2
St. Vincent's Hospital	St. Vincent's Hospital	Crookston	1
Swedish Hospital	Swedish Hospital	Minneapolis	4
Univ. Bacteriology Dept.	Univ. Bacteriology Dept.	Minneapolis	2
University Hospital	University Hospital	Minneapolis	2
———	Virginia Municipal Hospital	Virginia	1
Wesley Hospital	———	Wadena	1
———	Winona General Hospital	Winona	1

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

CHALLENGE TO MEDICINE

Is medicine to go forward or backward in America after the war?

Senator Wagner and his associates believe it will go forward only if the government and the Surgeon General of the Public Health Service are permitted to take over distribution and standards of medical service.

Henry Kaiser, the shipbuilder, believes it will go forward only if medical centers, financed by voluntary community pre-payment plans, with industry to spark them, are extended all over the United States.

Most physicians see the problem from the point of view of standards and scientific progress, chiefly, rather than of distribution. They believe medicine will go forward only if it remains essentially free from the shadow of political interference, regardless of whether it is paid for before the service is given, or afterwards, or not at all. On the other hand, they also believe in careful experiments with new forms of distributing the cost, to be used where they may be needed. But they believe at the same time, that the established form of private practice will be satisfactory, with minor modifications, for the vast majority, at least until some of the experiments with other forms now going on have definitely demonstrated their superiority. They believe, in any case, that medical service must be under the complete control of physicians and that local authorities, rather than the federal government, should be responsible, in coöperation with private agencies, for handling local medical problems.

Mr. Kaiser Agrees

It is interesting to note in Paul de Kruif's much discussed, newly published book called "Kaiser Wakes Up The Doctors," that Mr. Kaiser, himself, is in entire agreement with many of these beliefs of the doctors.

For instance, Mr. Kaiser lines up squarely against government hand-outs and control of medicine from Washington.

"You can't centralize 135,000,000 people," he remarks in the de Kruif book. "You haven't got the force for remote control."

He is certain, he says, that you cannot run medical care efficiently from Washington. Whether, as an alternative, you must have the hundreds of new health centers which Kaiser demands, is certainly doubtful, at least, and would be questioned by physicians and hospitals. On the other hand, these same physicians and hospitals would agree that new facilities and altered patterns may be needed in some quarters and that whatever form the new facility took, whether an industrial pre-payment plan or a medical center, the medical services should be controlled exclusively by medical men. They also believe that the new undertaking should not overlap or compete with any adequate, already-existing facilities.

May Be Useful Elsewhere

In point of fact, the doctors have usually seen the necessity for special facilities to meet unusual needs. The plan developed for the Kaiser shipbuilders in California is doubtless needed there and may be very useful elsewhere in similar industrial communities even after the war. Likewise, the coöperation between the California Physicians' Service with the Kaiser facilities for the care of wives and children of workers may have developed a useful pattern for future use in like abnormal circumstances.

Far from flying in the face of medical orthodoxy, as de Kruif seems to think, Kaiser has only put into vigorous practice in a crisis, principles which are recognized by all enlightened medical organizations, including the California State Medical Association. It is not surprising

that he should dream, in his enthusiasm for the success of his own project, of a blanket of industrial-medical enterprises covering the entire country, self-supporting and all-embracing. Sober reflection will undoubtedly show him that such dreams may not be capable of realization nor even desirable except in a small number of exceptional communities.

No Comprehensive Policy

There is a challenge to medicine, nevertheless, in the de Kruif book and in much other journalism about costs and distribution of medical care which is now receiving ready publication at the hands of news-conscious editors. It does not, of course, lie in mere acceptance or rejection of Kaiser's aspirations. But it does lie in the fact that organized medicine has not yet drawn up a comprehensive public policy, laying out a constructive program, for the health of the American people. The government, through Senator Wagner, has presented a plan, faulty and unsound though it may be. The doctors do not and cannot accept that plan. But they should draw up a policy of their own. They should not consider insurance plans only. What is needed now is something far more comprehensive. From the doctors should come an over-all study which soberly and realistically assesses the whole system in America today, picks out the weak spots, offers practical solutions for them and sets a course to aim at in future years.

It cannot be denied that organized medicine has failed to meet that challenge on a nation-wide scale, for the reason, perhaps, that such planning was considered to be the function of the individual states in accordance with their separate, individual problems. Some states have, in fact, accepted that responsibility. But a constructive social policy on a national scale has been lacking. An apparent disposition on the part of some doctors to block all medical-social reforms suggested by others has been interpreted as mere obstructionism, petulance and self-seeking by many otherwise neutral lay observers.

Medical Blue-Print Needed

To counteract that feeling and to answer the questions of intelligent men who have been aroused to interest everywhere, a medical blueprint for the future is greatly needed. In such a blue-print the gaps in our organization for public health would be clearly demonstrated. To close those gaps by strengthening the state departments of health and by encouraging the extension of health and sanitation units all over the country would be a logical first step in any realistic program for improving the health of the people. Public health and sanitation is acknowledged without question to be the function of the state. For the state or federal government to by-pass that fundamental responsibility and plunge direct into healing the sick—a function which does not belong either to government departments of health or social security, is both illogical and dangerous in the extreme. The medical men of the country should be the first to point it out, while rightly opposing the Wagner bill. But for the doctors to content themselves merely with opposition to this bill would be almost equally dangerous, in the face of the mounting public demand for a constructive, long-range plan. Inertia, coupled with opposition, is the surest way to provoke dangerous legislation.

Look to New Council

Fortunately the physicians now have a planning agency which is an integral part of the American Medical Association and responsive directly to the will of representative medical men throughout the country. This is the new Council on Medical Service and Public Relations established at the last delegates' meeting in Chicago. The new Council has the power and the mandate to fashion a constructive policy for medicine and it is ideally suited to meeting the urgent need for leadership today. It is the earnest hope of all forward-looking units of organized medicine that the new Council will carry forward the social and economic phases of medicine which have heretofore lagged behind its scientific achievements, in the difficult years ahead.

Action Demanded

The editorial entitled "The Time Is Now" which appeared in the November issue of the *Westchester* (New York) *Medical Bulletin* is good evidence of the general desire for a new public policy on the part of physicians. A part of the editorial follows:

> Our failure clearly to interpret ourselves, our accomplishments, and our sincere purpose to the American

people has rendered the art and science of American medicine exquisitely vulnerable to political manipulation by a bureaucracy seeking new ways of perpetuating its power. Furthermore, medicine's position of responsibility to the public places it at the mercy of political attack or envelopment.

What *can* be done, . . . what *must* be done, if we are to fulfill our fundamental obligation to the American people, and our responsibility to those who will follow us in our profession?

First, we *can,* even at this eleventh hour, *frankly and honestly tell our own story,* utilizing *in our own name* all the available means and media of modern public relations. If the American Medical Association must forfeit its tax-exempt status for the privilege of interpreting, not itself, but the medical profession to the American people (an assertion which we don't believe and hereby challenge)—then by all means let us buy our chips and get into the game! *Is it more important to the welfare of the American people for us to be exempt from taxes than from bureaucratic dictation?*

Second, we *can,* even at this eleventh hour, *establish an information and service bureau in Washington,* openly dedicated to the need of maintaining a continuous two-way channel of intercommunication between the medical profession and the people, the Federal agencies, and legislators who are interested in the services we render. The need for a Washington office for the American Medical Association is so obvious and urgent as to make any further delay in its establishment a matter of criminal negligence, in our opinion.

Third, we *can,* even at this eleventh hour, *assume our earned and rightful place of leadership* in the councils of those who seek to mould the future of our calling. We must certainly expect great and fundamental social changes; we will probably have to accept an increasing degree of proper governmental participation in medical service. But in any case, the profession must assert and maintain a definite status in the formulation of all legislation on health and medical matters. Merely to confer with governmental agencies cannot reasonably be construed as evidence that medicine has accepted their theories or philosophies concerning medical service. On the contrary, medicine owes it to the public, as it surely owes it to its own members, to assert its earned leadership in determining its own future.

The time is now!

Scientists are being asked to recommend persons who may be eligible for the 1943 Charles L. Mayer award of $2,000.

The award is offered for the most outstanding contribution made during 1943 to present-day knowledge of factors affecting the growth of animal cells, with particular reference to human cancer. The National Science Fund of the National Academy of Sciences administers the award.

Manuscripts and articles published during 1943 may be submitted to the committee any time before the middle of January, 1944.

Last year's award, the first to be given, was made to Dr. Charles Huggins of the University of Chicago for his work on endocrine control of prostatic cancer. —*Science News Letter,* November 27, 1943.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

J. F. Du Bois, M.D., Secretary

Roseau County District Court Issues Bench Warrant for Unlicensed Chiropractor

Re: State of Minnesota vs. Knute H. Luross, unlicensed.

On September 15, 1943, the Hon. Oscar R. Knutson, Judge of the District Court for the 14th Judicial District, issued a bench warrant at Roseau, Minnesota, for the arrest of Knute H. Luross, an unlicensed chiropractor, who had been ordered to appear before the Court to answer for alleged contempt of Court. Judge Knutson, in his order directed the Sheriff of Roseau County to apprehend the defendant and to hold him in custody unless the defendant furnished bail in the sum of $1,000. Before the Sheriff had an opportunity to serve the bench warrant, Luross left Roseau and has not been apprehended up to date.

The defendant has a long record of violating the healing laws of Minnesota. In March, 1936, he was tried and convicted by a jury of Polk County of practicing healing at Fosston, Minnesota, without a basic science certificate. He was sentenced to a term of 6 months in the Polk County Jail and the sentence was suspended by Judge Montague. Subsequently, Luross moved to Roseau, Minnesota, where he continued to engage in the practice of healing without a basic science certificate, and following an investigation made by the State Board of Chiropractic Examiners, the Court on April 9, 1942, made an order for judgment permanently restraining and enjoining Luross "from practicing healing in the State of Minnesota, including the practice of Chiropractic, until such time as he shall have been duly and regularly licensed to practice said healing in accordance with the laws of the State of Minnesota and until he shall have procured a certificate of registration in the basic sciences, and from advertising or in any way representing to the public that he is qualified or authorized to practice healing or to practice Chiropractic as defined by the laws of this State or from diagnosing, or attempting to diagnose, or treating, or attempting to treat, any of the diseases, maladies, afflictions or ailments of the human body."

On April 17, 1942, judgment was entered in accordance with Judge Knutson's order. In August, 1943, it was learned that Luross was again illegally engaged in the practice of healing at Roseau. The matter was again investigated by the State Board of Chiropractic Examiners, following which Judge Knutson ordered the defendant to appear in Court on September 15, 1943, to answer for alleged contempt of Court, the contempt being based upon the alleged violation of the Court's injunction issued in April, 1942.

The Minnesota State Board of Medical Examiners respectfully requests that anyone having knowledge of the defendant's whereabouts, promptly report the same to the Board.

White Bear Lake Woman Sentenced to 9 Months Imprisonment for Illegal Shipments of Abortion Paste

Re: United States of America vs. Anne M. Jenks.

On November 2, 1943, the Hon. M. M. Joyce, Judge of the United States District Court, sentenced Mrs. Anne M. Jenks, forty-three years of age, of White Bear Lake, Minnesota, to a term of nine months imprison-

ment in a penal institution and a fine of $200 for violating the Federal Food, Drug and Cosmetic Act. Mrs. Jenks was indicted by a Federal Grand July in Saint Paul, Minnesota, on June 29, 1943 on twenty counts for alleged violations of the above law. On September 11, 1943, Mrs. Jenks entered a plea of guilty to five counts of the indictment and the Court nolled the remaining counts. Mrs. Jenks is serving her sentence at the Women's Reformatory at Shakopee, Minnesota.

On January 19, 1943, the United States District Court, in an order signed by the Hon. Robert C. Bell, permanently enjoined Mrs. Jenks from shipping in interstate commerce a drug labeled "Intrauterine Paste" or "Dependon Products Paste" manufactured and sold by Mrs. Jenks at White Bear Lake, Minnesota. The injunction followed a lengthy trial in which the Government called forty-six witnesses, thirty-nine of whom were physicians. Six of the witnesses were confessed criminal abortionists. The Court, in its findings, held that the paste "is unsafe and dangerous to health and has caused fatalities and serious injury." The Court also found, as a matter of law, that the paste was misbranded and that the labeling was false and misleading. At the conclusion of the injunction suit Mrs. Jenks was fined $250 for contempt of Court and her husband, W. S. Jenks, was fined $500 for a similar offense growing out of the shipment of the paste to a Missouri physician after the Court had issued a temporary injunction on October 31, 1942.

Minneapolis Pharmacist Pays $200 Fine for Illegal Sale of Paregoric

Re: State of Minnesota vs. Bernice L. Murdock.

On November 5, 1943, Bernice L. Murdock, fifty-one years of age, proprietress of the Murdock Pharmacy, at 2451 Bloomington Avenue, Minneapolis, paid a fine of $200 in the District Court of Hennepin County, following her plea of guilty to an information charging her with the sale of paregoric without a medical prescription. The defendant was given her choice by the Hon. Frank E. Reed, Judge of the District Court, of paying the fine or serving six months in the Minneapolis Workhouse.

The defendant was arrested on October 29, 1943, following an investigation by the Federal Bureau of Narcotics. It was disclosed that the defendant had made ten sales of paregoric to one individual between August 27, 1943, and October 20, 1943, the sales totalling 52 ounces and no medical prescriptions having been issued by a duly licensed physician authorizing the sales. The defendant has a previous conviction in April, 1939, in the Municipal Court of Minneapolis, of selling liquor without a license. At that time she was fined $100 for selling liquor on fictitious prescriptions.

The Minnesota Legislature in 1941 amended the law so as to require a medical prescription for the sale of paregoric. Prior to that time paregoric was known as a so-called exempt preparation and pharmacists could lawfully sell not to exceed 2 ounces of paregoric within forty-eight hours for the use of one person, without a prescription.

License of Minneapolis Physician Revoked Following Conviction for Manslaughter

Re: State of Minnesota vs. Gustav D. Eisengraeber.

On November 5, 1943, following a hearing held before the Minnesota State Board of Medical Examiners, the license to practice medicine formerly held by Gustav D. Eisengraeber, M.D., 1406 W. Lake Street, Minneapolis, was revoked. Dr. Eisengraeber was charged with procuring, aiding and abetting a criminal abortion on a thirty-one-year-old, Minneapolis married woman who died on July 30, 1943, at St. Barnabas Hospital, Minneapolis.

On August 19, 1943, Dr. Eisengraeber was arrested on a criminal complaint charging him with the crime of manslaughter in the first degree in the same case, following a joint investigation by the Minneapolis Police Department, the Hennepin County Attorney's Office and the State Board of Medical Examiners. Dr. Eisengraeber waived a preliminary hearing in the Municipal Court of Minneapolis and, upon being arraigned in the District Court, entered a plea of not guilty, and was released upon cash bail of $5,000. His case was set for trial for September 13, 1943. It was subsequently continued, and on October 25, 1943, Dr. Eisengraeber withdrew his plea of not guilty and entered a plea of guilty before the Hon. E. A. Montgomery, Judge of the District Court. Judge Montgomery continued the case for one week and on November 2, 1943, sentenced Dr. Eisengraeber to a term of not to exceed ten years in a state penal institution, stayed execution of the sentence and placed Dr. Eisengraeber on probation for a period of five years. Judge Montgomery told Dr. Eisengraeber that if he violated any order of the Minnesota State Board of Medical Examiners with respect to a suspension or revocation of his license as a physician, it would be grounds for vacating the stay in the criminal case and Dr. Eisengraeber would have to serve his sentence.

Dr. Eisengraeber was born in Saint Paul, Minnesota, in 1886, and graduated from the University of Minnesota in 1912. Dr. Eisengraeber stated to the Court that prior to practicing medicine in Minnesota, he had practiced in Washington, Montana and Alaska.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

Physicians Licensed November 5, 1943

October Examination

BACON, JOHN FREMONT, U. of Pa., M.D., 1942, 328 E. Henn. Ave., Minneapolis, Minn.

BLAKE, ALLAN JOHN, Marquette U., M.D., 1943, 42 15th Ave. N., Hopkins, Minn.

CAMERON. JOHN MINGE, Harvard U., M.D., 1942, Mayo Clinic, Rochester, Minn.

COLLINS, ROYDEN FRED, U. of Wis., M.D., 1942, 1663 Sherburne Ave., St. Paul, Minn.

CRONKITE, ALFRED EUGENE, Stanford U., M.D., 1938, Mayo Clinic, Rochester, Minn.

GEIST, SUSANNE, U. of Minn., M.B., 1942; M.D., 1943, 825 St. Clair Ave., St. Paul, Minn.

HAGEDORN, ALBERT BERNER, Stanford U., M.D., 1943, Mayo Clinic, Rochester, Minn.

HAINES, RICHARD DEWAYNE, U. of Rochester, M.D., 1942, Mayo Clinic, Rochester, Minn.

HALL, WILLIAM EVERETT. Marquette U., M.D., 1943, Miller Hospital, St. Paul, Minn.

HUSEBY, ROBERT ARTHUR, U. of Minn., M.B., 1943, University Hospital, Minneapolis, Minn.

HUTCHINS, SELWYN PERCIVAL RICE, U. of Texas, M.D., 1941, Mayo Clinic, Rochester, Minn.

IAMS, ALEXANDER MURDOCH, U. of Pa., M.D., 1942, Mayo Clinic, Rochester, Minn.

KLONTZ, CHARLES E., JR., U. of Ill., M.D., 1942, Mayo Clinic, Rochester, Minn.

LENZ, GILBERT GORDON, U. of Minn., M.B., 1943, Ancker Hospital, St. Paul, Minn.

LEVIN, LOUIS, U. of Cincinnati, M.D., 1941, Mayo Clinic, Rochester, Minn.

MCCLELLAN, JAMES THOMAS, U. of Okla., M.D., 1942, Mayo Clinic, Rochester, Minn.

MILLEN, FRANCIS JOSEPH, Marquette U., M.D., 1942, Mayo Clinic, Rochester, Minn.

OLIVER, JAMES, Northwestern, M.B., 1943, Ancker Hospital, St. Paul, Minn.

PETERSON, FLOYD RUSSEL, U. of Minn., M.B., 1943, St. Luke's Hospital, Duluth, Minn.

ROUSUCK, ASHER ASHLEY, Wayne U., M.D., 1940, Mayo Clinic, Rochester, Minn.

SBOROV, ABE MICHAEL, U. of Minn., M.B., 1943, Ancker Hospital, St. Paul, Minn.

STATE, DAVID, U. of Western Ontario, M.D., 1939, University Hospital, Minneapolis, Minn.

STEVENSON, MARGARET LYDIA, U. of Minn., M.B., 1942, 815 Superior St. S.E., Minneapolis, Minn.

STUELAND, A. J. RICHARD, Temple U., M.D., 1943, Ancker Hospital, St. Paul, Minn.

THOMAS, HENRY RANDALL, U. of Pa., M.D., 1939, Mayo Clinic, Rochester, Minn.

TOMPKINS, SOUTHER FULTON, Washington U. (Mo.), M.D., 1942, Mayo Clinic, Rochester, Minn.

WILLIAMSON, ROBERT JAMES DOUGLAS, U. of Toronto, M.D., 1940, Mayo Clinic, Rochester, Minn.

WILSON, HAL TRUAX, U. of Michigan, M.D., 1942, Mayo Clinic, Rochester, Minn.

WILSON, THOMAS REID, La. State U., M.D., 1941, Mayo Clinic, Rochester, Minn.

WOOD, WILBUR DONALD, U. of Minn., M.B., 1940; M.D., 1941, Mayo Clinic, Rochester, Minn.

By Reciprocity

DOUGLASS, BRUCE ECCLES, U. of Wis., M.D., 1942, Mayo Clinic, Rochester, Minn.

FAIR, ELLIS EDWIN, U. of Okla., M.D., 1941, Mayo Clinic, Rochester, Minn.

GRAHAM, RUSSELL BION, U. of Colo., M.D., 1942, Mayo Clinic, Rochester, Minn.

GUENTHER, THEODORE AUGUST, U. of Mich., M.D., 1940, Mayo Clinic, Rochester, Minn.

HENRY, EARL WILSON, JOHNS HOPKINS, M.D., 1940, Nopeming, Sanatorium, Nopeming, Minn.

KIRKLAND, WILLIAM GEORGE, HAHNEMANN MEDICAL College, (Pa.) M.D., 1938, Mayo Clinic, Rochester, Minn.

PEASE, GERTRUDE LORNA, CREIGHTON U., M.D., 1941, Mayo Clinic, Rochester, Minn.

REIF, HAROLD ALFRED, Wayne U., M.D., 1937, 1009 Nicollet Ave., Minneapolis, Minn.

RICKARD, ELSMERE RIFE, Northwestern, M.B., 1923; M.D., 1924, Minn. Dept. of Health, U. Campus, Minneapolis.

ROBSON, JOHN THEODORE, U. of Ore., M.D., 1942, Mayo Clinic, Rochester, Minn.

SPAR, ARTHUR AARON, U. of Neb., M.D., 1942, Mayo Clinic, Rochester, Minn.

By National Board Credentials

DETERLING, RALPH ALDEN, JR., Stanford U., M,D., 1942, Mayo Clinic, Rochester, Minn.

GENTRY, ROBERT WILTON, Harvard U., M.D., 1942, Mayo Clinic, Rochester, Minn.

HESKETT, ROBERT GLYNN, Harvard U., M.D., 1941, University Hospital, Ann Arbor, Mich.

JARBOE, JAMES PARRAN, Georgetown U., M.D., 1942, Mayo Clinic, Rochester, Minn.

MICKELSEN, EMMA FLORENCE, U. of Minn., M.B., 1937; M.D. 1938, 4390 Coolidge Ave., Minneapolis, Minn.

Communications

Minneapolis, Minnesota
October 15, 1943

To the Editor:

The conception that radiological services are something different from other medical services is, unfortunately, too widely held. Such a conception is well illustrated in the editorial "The A.H.A. and the A.M.A.," which appeared in the October issue of MINNESOTA MEDICINE. To those of us who are engaged in the training of young physicians to specialize in radiology, the implication that this specialty is different in character from other fields of medicine is particularly disturbing. To attract able men to a very important field it is imperative that no artificial distinctions which may impair the dignity or the independent status of the radiologist be instituted.

Regardless of the merits of the controversy as to whether medical services should be more widely distributed by various means, such as expansion of hospital service contracts or further entrance of the federal government into the health field, any consideration of such proposals on the part of the medical profession should have as their basis the assumption that what applies to one specialty will eventually apply to another. If we admit that radiology is a medical specialty and not simply a hospital service of a technical procedure, then we must treat this type of service in exactly the same way as we would any other type. For example, in the editorial referred to, the sixth paragraph could be rewritten to read as follows:

Surgical service, when needed, constitutes one of the expensive items for the sick. It is highly desirable from the patient's standpoint that its possible need should be included in a hospital service contract. Lowering the cost of illness is one of the aims of the medical profession. The hospital service organization does not determine the compensation of the employed surgical specialist but insures against hospital expense, which may include surgical service. Then the problem reverts to the proper method of compensating the surgeon serving the hospital.

What is wrong with this paragraph? The substitution of the word "surgeon" or "surgery" for "x-ray" makes it sound rather ominous to the average medical man. Why should it not be equally ominous if we use x-ray as used in the original editorial statement? Another quotation, in its original form, from the same editorial is of significance:

There may be some danger that hospital service organizations might attempt to expand the present provisions of their contracts to include more than diagnostic medical service. This, however, would constitute medical practice by a corporation, which is contrary to law.

Does this imply that diagnostic medical service is not medical practice and that the furnishing of diagnostic medical service by a corporation is not contrary to the

law? It is difficult to interpret the paragraph otherwise, yet it has been clearly established by the courts and by medical opinion that diagnostic medical practice by a corporation is against the law.

It may be granted at once that there is a serious problem in the dispensation of all types of medical services to patients. It may well be agreed, however, that the high cost of surgical service is a far more pressing problem, so far as most patients are concerned, than the high cost of x-ray service. That some means should be instituted to make it possible for the medical profession to lower the cost of illness is certainly desired by all, but that this should be done by making one or another group of specialists subservient to the hospital is an entirely different matter. It is possible that the fees for x-ray services in the private offices of radiologists may be higher than necessary. Many individuals feel that the fees of many internists are also too high, yet who amongst us would wish to determine what fees any particular physician should charge? Medical men need to give thought to the problems presented in the editorial. But in doing so they should look at them not from the point of view of the surgeon or the ophthalmologist or the internist but rather as a problem affecting the whole of medical practice, keeping clearly in mind that radiology is the practice of medicine and therefore should not be dispensed by corporations.

LEO G. RIGLER

San Francisco, California
October 29, 1943

To the Editor:

Your recent editorial in MINNESOTA MEDICINE has come to my attention. The implication seems to be that the House of Delegates of the American Medical Association did not quite know what they were about when they adopted some decisive resolutions this year regarding the advisability of hospitals furnishing medical services in Blue Cross Plans.

You observe that the "increase in the number of hospital service contracts . . . have doubtless brought to a head the question of the propriety or advisability of hospitals supplying the services of doctors. . . ." Permit me to point out to you that the problem is of over ten years' standing and has been tackled by many previous Houses of Delegates. The fact that a solution has not been achieved is just another indication of the extraordinary slowness of some of our processes in a democracy.

Hospitals *have* attempted to furnish a tonsillectomy along with the bed in some flat rate plans; others *have* furnished obstetrical services along with the bed in some obstetrical plans. These plans start with very noble motives but tend to develop into systems whereby a lay corporation, the hospital, sells a physician's services and sets the price on those services. When times get tough they may have to economize and then the only thing they can reduce is the quality or quantity of the medical service. Many of them end by hiring the physician on the basis of the salary he will accept rather than on the basis of his qualifications. For this reason, it is unwise for hospitals to attempt to furnish any physician's services along with and as a part of hospitalization.

* * *

A solution for the problem of including diagnostic medical services in group hospitalization plans might be the formulation of a joint "medical-hospital" policy. Only about five or ten cents in every hospital dollar is allocated to diagnostic medical services in the hospital. Let us say that ten cents of every new contract dollar is allocated to diagnostic medical services and paid directly to the patient, or the patient and the physician rendering the service. The other ninety cents can be retained by the hospital in the present manner. Instead of calling them hospital service contracts, you would call them hospital plus diagnostic medical service contracts. They could be administered jointly by groups of hospital administrators and physicians. They would cost the public no more and would involve less complicated bookkeeping than the present systems involve, less complaints and unhappiness on the part of far-seeing physicians.

Another solution might be for the hospitals to sell straight hospitalization insurance for perhaps one and one-half cents a day, a very cheap policy. Then, join that with some type of medical or surgical contract providing either catastrophic coverage or major hazard coverage. Most patients can indeed afford to pay a ten or fifteen dollar x-ray charge; the backbreaking part of a hospital visit is usually the two or three hundred dollar surgical charge. If Blue Cross Plans must sell some medical services along with hospitalization, why not make it a worth-while deductible policy similar to the catastrophic or major hazard automobile policy now in wide use? These deductible policies tend to police themselves and are not very expensive, yet widely sold.

Yours truly,

L. HENRY GARLAND, M.D.

P. S. Kansas City Blue Cross Plan has sold over 107,000 policies, *excluding* radiology.

Chicago, Illinois
October 25, 1943

To the Editor:

Your editorial "The A.H.A. and the A.M.A.," in MINNESOTA MEDICINE for October is provocative. I wonder if you realize that it is also self-contradictory?

In discussing the "propriety of hospitals furnishing the services of physicians such as those in charge of x-ray departments," you conclude that "a hospital, to be more than a hotel, must supply certain medical services."

I think a large portion of the medical profession would disagree. Apparently you also disagree when, in a later paragraph, you concede that the inclusion of radiology in hospital service plans may later lead to the inclusion of more than diagnostic medical service.

"This, however, would constitute medical practice by a corporation, which is contrary to law," you declare.

Are not diagnostic medical services, then, medical services? If it is unlawful for incorporated hospitals or service plans to practice medicine, how is it that you would permit them to practice radiology? If you would permit corporations to practice certain medical specialties, where would you draw the line, and how would you support your principle that corporate practice is unlawful and inimical to the public welfare?

* * *

Radiologists heartily approve of the principle of hospitalization insurance. They disapprove of hybrid plans, part hospital and part medical, under which the corporation guarantees to provide not only hospital service, but the services of certain physicians as well. They oppose the corporate practice of radiology for the same reason that internists oppose the corporate practice of internal medicine: such practice is contrary to the best interests of the patient.

More than half the approved Blue Cross Plans have acceded to the demands of the A.M.A. by confining their benefits to hospital services. These plans receive the support of the medical profession. It would be unfortunate if the plans which insist upon violating accepted principles of medicine by including certain medical services as benefits in kind took your editorial remarks as evidence of support from a divided profession.

Yours truly,
MAC F. CAHAL
Executive Secretary
American College of Radiology

PROBLEMS ENCOUNTERED IN EXPLAINING CERTAIN CASES OF ERYTHROBLASTOSIS FETALIS ON THE Rh THEORY

(Continued from page 1059)

fertile one for further research and hopeful simplification.

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In Memoriam

OSCAR O. LARSEN

Dr. O. O. Larsen, well-known eye, ear, nose, and throat specialist of Detroit Lakes, Minnesota, died suddenly in his automobile, November 7, 1943.

Dr. Larsen was born in Saint Croix County, Wisconsin, August 6, 1877. He received his early education at Decorah, Iowa, and obtained his B.A. degree from Luther College before attending the medical school at the University of Minnesota, where he graduated in 1907.

From 1907 until 1913, Dr. Larsen practiced at Zumbrota, Minnesota, when he moved to Detroit Lakes and bought the Detroit Hospital, which was later sold to the St. Mary's Hospital Association.

For many years, he served on the Minnesota State Sanitary Conference and was its president in 1940. During World War I, he served as physician-surgeon member of the local draft board, and during the present war, he acted as specialist in the examination of rejectees.

Dr. Larsen was well known throughout the state as secretary of the Northern Minnesota Medical Association, in which capacity he served for eight years until elected president in 1937. He was also past secretary of the Clay-Becker County Medical Society, and at the time of his death was president. He was also a member of the Interprofessional Committee of the Minnesota State Medical Association.

Dr. Larsen was active in various capacities in the local Civic and Commerce Association, serving as president in 1941 and 1942. He was awarded the Silver Beaver Award in 1933, for his enthusiastic support of the Boy Scouts organization. He gave his generous support to the First Lutheran Church of Detroit Lakes. He also took a lively interest in hunting and fishing and the preservation of the natural playground afforded by the Northern Minnesota woods.

On December 22, 1903, he married Nora Herum of River Falls, Wisconsin. In addition to his widow, he is survived by four sons, Erling, Einar, Harold, and Adolph, and one daughter, Doris.

ALLAN BLANCHARD STEWART

Dr. A. B. Stewart, one of the outstanding surgeons of the state and a prominent citizen of Owatonna for fifty-two years, died at Rochester on October 30, 1943.

Dr. Stewart was born September 23, 1863, at Hume, New York. His early education was obtained at Ten Broeck Academy, Franklynville, New York, and at Genesco Normal College of Genesco, New York. Graduating from the University of Minnesota Medical School in 1891, he interned a few months at the Minneapolis General and the Saint Paul City (now Ancker) Hospitals and began practice in Owatonna that same year.

Elected mayor of Owatonna in 1897, he retired before

the completion of his term to go abroad for medical study in Edinburgh and Vienna.

A Captain in the Medical Reserve Corps at the outbreak of World War I, he was called to active duty in July, 1918, and was promoted to the rank of Major and placed in charge of the Medical Service of the United States General Hospital, Fort Snelling.

Dr. Stewart was a Master Mason and Past Master of the local Blue Lodge, a Past High Priest of the Chapter of Royal Arch Mason and a Past Commander of Knights Templar. He was a member of the Steele County Medical Society, the Minnesota State and American Medical Associations, and a member of the American College of Surgeons. On two occasions, he was president of the Southern Minnesota Medical Association. He was also a member of the Association of Railway Surgeons and an organizer of the local chapter of the American Red Cross. It was largely through the efforts of Dr. Stewart and the late Dr. Adair that the first Owatonna City Hospital was established.

On November 23, 1893, Dr. Stewart married Sidnie Ada Loomis of Owatonna. Thus their golden wedding anniversary was due in November of this year. Dr. Stewart had a long and useful career not only as a physician but as a citizen. His genial and understanding personality endeared him to a host of friends who will greatly miss him.

LOUIS BLANCHARD WILSON

The death of Dr. Louis Blanchard Wilson on Tuesday, October 5, 1943, at the age of seventy-six years, will be regretted by the medical profession of Minnesota, particularly on account of his past interest in state public health and his part in the affiliation of the Mayo Foundation with the University of Minnesota. His enthusiasm, diverse knowledge, vivid imagination and ability to speak in public made him a figure of attention at all medical gatherings. One recognized that he was a self-educated man who availed himself of many subjects of popular interest.

He was born in Pittsburgh, December 22, 1866, graduated at the Pennsylvania Normal School at the age of twenty years, taught biology in the Central High School of Saint Paul for ten years during which time he studied medicine at the University of Minnesota, his special interest being the new field of bacteriology. After graduation he became an assistant bacteriologist in the recently formed Minnesota State Board of Health, and assistant Professor of Pathology and Bacteriology at the University which had just established that department. This position he held under Professor Wesbrook until 1905 when Dr. William J. Mayo and his brother Charles invited him to join them in their reorganization of an enlarged private practice in Rochester, Minnesota, then a city of about 5,000 inhabitants. He succeeded Drs. Gertrude Booker and Isabella Herb who, under the direction of Dr. H. S. Plummer, had conducted all previous clinical laboratory procedures with the assistance of Daisy and Helen Berkman who did all routine blood and urine examinations. In a small room near the operating rooms he started a laboratory for the study of surgical specimens and adapted a method of staining microscopic sections for immediate diagnosis, which has been used with modifications ever since.

In 1915, with the creation of the Mayo Foundation for Graduate Medical Education and Research he became Director and remained in that position until his retirement in 1937. In 1918, he was commissioned a Major in the Museum Division of the United States Army medical service and served with the American Expeditionary Forces, collecting museum specimens of different types of wounds. He returned to the Mayo Foundation in 1919 and as Director had wide and diversified contact with the medical schools of this and other countries.

Dr. Wilson's variety of interests may be seen in the organizations to which he belonged which, besides medical societies, included the Advisory Board for Medical Specialists, the American Association for the Advancement of Science, the American Anatomists, the Association of Military Surgeons of the United States of America and the National Board of Medical Examiners, in some of which he was president. He belonged to Alpha Kappa Kappa, Alpha Omega Alpha and Sigma XI.

His early contributions to medical literature were upon bacteriological subjects in collaboration with Drs. C. E. Riggs, F. F. Wesbrook, O. McDaniel, F. L. Adair, C. L. Greene, J. L. Rothrock, G. D. Head, S. D. Brimhall, and William Chowning, whose names are well known in the early development of public health in the state of Minnesota. In the Mayo Clinic his contributions dealt with goiter, gastric cancer, diverticulitis of the colon, hypernephroma, and the application of photography to medical illustrating. Besides his medical interests he devoted much of his time to color photography, hunting, horticulture and ballistics. At all times he was an interesting and valuable citizen in his community and contributed much to popular interest.

Dr. Wilson was married three times, his first wife being Mary E. Stapleton who was his mate during his early high school teaching days, those in public health service, and the formative period of the Mayo Clinic in Rochester, Minnesota. She died June 4, 1919, leaving two children. On August 23, 1924, he married Maud H. Mellish of the editorial department of the Mayo Clinic. She died November 6, 1933 and on January 2, 1935, he married Grace G. McCormick, who survives him. He was buried with military honors in Rochester, October 7, 1943, leaving behind valuable memories to all who knew him well.

WILLIAM CARPENTER MACCARTY, M.D.

The opportunity offered by routine x-ray or fluoroscopic chest examinations of adult admissions to general hospitals as a source of tuberculosis case finding has not been fully utilized. In a recent survey in a New York hospital tuberculosis was found in approximately 4 per cent of the patients. These cases would not otherwise have been detected. Of these 2.8 per cent had reinfection disease and 0.6 per cent had active or questionably active disease requiring hospitalization or close observation.—WILLIAM C. CHILDRESS, M.D., et al., *J.A.M.A.*, Aug. 14, 1943.

Minneapolis Surgical Society

Meeting of October 7, 1943

President, H. O. McPheeters, M.D. in the Chair
Secretary, John M. Feeney, M.D.

INJURIES OF THE URINARY TRACT

THEODORE H. SWEETSER, M.D.
Minneapolis, Minnesota

It seems to me that there is a widespread failure to realize that surgical intervention is needed promptly in most types of injury of the urinary tract. There are perhaps three principal causes for this inclination to "wait and see." First, we know from experience that some 70 per cent of cases of nonpenetrating (subparietal) injuries of the kidney with hematuria will not need operative interference. That does not hold true for injuries of the ureter, bladder or urethra. Second, many of the patients with hematuria following injury have one or more serious and easily demonstrable injuries outside the urinary tract which at the time may completely occupy the surgeon's attention, unless he carefully looks for trouble in the urinary tract. Such other injuries include fractures and head injuries. I have seen several patients in consultation after their opportunity for recovery by urologic surgery had been allowed to pass, while their doctor had been occupied with the care of injuries outside the urinary tract. A third cause of delay has been the attempt to make an accurate diagnosis without adequate means. Some traditional diagnostic methods are notoriously misleading, and sometimes exploratory operation is safer than a prolonged diagnostic study. Intravenous urography has been a great help.

I am passing out to you copies of a more detailed summary of my understanding of these problems, as they are related to the different parts of the urinary tract. I wish now to show slides calling attention to some cases which will illustrate the problems presented.

Discussion

DR. WILLARD D. WHITE: Dr. Sweetser has covered very thoroughly the subject of injuries to the ureters, bladder and urethra. My part in this discussion is to consider certain injuries to the urinary tract that complicate fractures of the pelvis. Further, I wish to point out that there are certain types of pelvic fracture in which injury to the urinary tract are most apt to occur. The pelvis is a ring made up of the two innominate bones and the sacrum. The type of fracture of the pelvis in which injury to the urethra and bladder are most apt to occur are those cases in which there is any marked displacement. Fractures of the pelvis can be classified into two groups.

1. Single or isolated types in which there is little or no displacement are most apt to occur in the anterior part of the pelvic ring. These may include separation of the symphysis pubis or fracture of the superior or inferior ramus of the pubis usually on one side only.

Fig. 1. Boy sixteen years old recently hurt in an automobile accident (patient of Dr. F. Holzapfel). Cystogram made by intravenous urography shows filling defects due to clots and lacerations (one in left wall containing a loose fragment of bone), compression of the bladder from both sides by hematoma and extravasated urine, and the lack of definition of the upper outline of the bladder shadow of questionable cause. There were no physical signs of peritoneal involvement. Through a midline suprapubic incision: (1) the peritoneal cavity was explored; (2) the perivesical fluid and clots were removed; (3) the bladder was opened, the two lacerations sutured from the outside and the loose bone fragment removed; (4) a catheter was passed from the bladder through the urethra to demonstrate lack of injury of the deep urethra; and (5) the incision in the bladder was closed up to a size 45 French wing-tipped right angled cystostomy tube. The patient made a very good recovery.

2. Combined fractures in which there is apt to be fracture through the pubis in front together with a fracture through the posterior part of ilium or a separation of the sacro-iliac joint. In this group of cases one-half of the pelvis is displaced and it requires a

serious trauma to do this. It is in this type especially that bladder and urethra injuries are most apt to occur.

The third point I wish to make is that it is very important to determine as promptly as possible whether or not there is injury to the urinary tract, so that it can be dealt with appropriately if present. As soon as the condition of the patient will warrant, which means if shock does not prohibit the procedure, an intravenous pyelogram should be done and the films carefully examined for evidence of extravasation. This is more certain and more accurate than injecting the bladder and in my opinion is much safer.

The fourth point I wish to make is that where there is a displacement of one-half of the pevis this displacement should be corrected by placing the patient in a position of lateral recumbancy on a fracture table with a pelvic rest under the sound side of the pelvis. Then a plaster cast is applied around the trunk and down to the knees on both sides.

The next point and a very important one is that in these pelvic injuries I believe there is a great deal of advantage in securing the services of a competent urologist as promptly as possible. They have many tricks in controlling these difficult cases.

Dr. S. R. Maxeiner: We have had three patients in a comparatively few years who demonstrated the fact that the character of the urine determined the prognosis. One of these was a young man who had been drinking a good deal of beer and had a very full bladder when he fell across his abdomen, striking on an iron pipe. He sustained a rupture of the urinary bladder. I did not see this patient until twenty-four hours after the injury. He had a tremendous ascites due to extravasated urine within the abdominal cavity. He had been catheterized and because the urine emptied from the peritoneal cavity through the rent in the bladder it was not thought that he had sustained such an injury. I operated upon this patient, repaired the rent in his bladder, closed the peritoneum without drainage and his recovery was entirely uneventful.

Two other patients came to our attention, one of whom had a ruptured bladder following a cystoscopic examination in which the cystoscope accidentally punctured the bladder wall. This patient had a carcinoma of the bladder and the cystoscope had passed easily through the necrotic portion. The urine was badly infected. A laparotomy was performed and the rent in the bladder was closed. The uterus was used as a patch but this patient promptly died from peritonitis.

The third patient was a man in his early seventies from whom we had removed a large prostate suprapubically. He subsequently reported with a bladder full of pus, much frequency and a medium sized stone was found in the bladder. A urologist saw him in consultation and believed that the stone could be crushed and evacuated through the urethra. During the crushing operation the bladder was perforated. In this instance I opened the abdomen at once and found the peritoneal cavity contaminated with cloudy urine of a very purulent character. This patient succumbed from peritonitis within a few days.

Our experience is that a rupture of the bladder is not such a catastrophe if the urine is sterile but the outlook is extremely bad in the presence of a septic urinary bladder.

Dr. Sweetser: (closing) Intravenous urography is probably the most valuable test of injury of the urinary tract. It does require, however, that the systolic blood pressure be sufficiently high (above 80 mm.) to ensure excretion of the iodide. This may necessitate preliminary measures to overcome the initial shock, but it does not relieve one of the responsibility of promptness in treating that shock, and of promptness in making a diagnosis and undertaking adequate surgical treatment whenever it is indicated.

In answer to Dr. Nordland's question regarding a different subject, I can remember one patient whose bladder mucosa had apparently sloughed quite completely but who recovered with finally a good bladder capacity. I can remember one or two others in whom the final result was a bladder of very small capacity. The result depends on the depth of the infection in the bladder wall, and the amount of scarring.

HYPERPARATHYROID DISEASE DUE TO TUMOR OF THE PARATHYROID

CARL O. RICE, M.D.
Minneapolis, Minnesota

I wish to report a case of hyperparathyroid disease due to tumor of the parathyroid.

This is a history of a woman, aged forty-five. It was revealed that she became sick at least two years ago, at which time she was confined to the hospital because of a "nervous breakdown." At that time, she had been losing weight, was extremely nervous, had a gagging sensation in her throat, and occasionally vomited. She was scarcely able to stand up, and was totally unable to do her work. She also was very apprehensive with regard to people and could not tolerate association with others. She was on the verge of being confined to a mental institution, but after a week or two in the hospital, she made some improvement, and was again discharged to the care of her family.

These symptoms persisted in greater or less degree, and were associated with numerous other atypical complaints, many of which were considered to be neurotic in origin.

In November, 1941, she began to complain of arthritic pain. She stated that she had stiff and painful joints in almost all parts of her body. From time to time these arthritic pains migrated from one set of joints to another.

In May, 1942, she became extremely sensitive to heat or cold, was unable to tolerate the slightest breeze, and it was difficult for her to be comfortable in any type of weather. At about that time, she also noticed some bowing of her forearms, in that the curve of the ulna seemed to be much more prominent than was normal.

These symptoms became progressively worse up to the time of her admission in August 1942 to St. Barnabas Hospital where she entered as a patient of Dr. Albert Lundgren.

The history also revealed that she had been experiencing some nocturia, and diurnal frequency of urination for about a year. The day-night ratio was about 8 to 6. Recently her vision had become blurred and at times she mentioned headache.

At the time of her admission to St. Barnabas Hospital, she was acutely ill, appeared very weak, was extremely emaciated, and appeared to be manifestly a very poor risk for any type of treatment. She was nervous and respirations were gasping as if she had difficulty in breathing. In spite of these symptoms, she seemed mentally alert, and fortunately, was coöperative.

The physical examination revealed the frontal bosses presenting a peculiar prominence, suggestive of thickening of the skull. (The patient stated that "her hats had become too small in the past year.") The eyes, ears, nose, and throat were normal. There was a definite systolic and diastolic bruit over the thyroid gland. The thyroid was slightly enlarged, but was symmetrical and of normal consistency. In the right lower pole of the thyroid, there was a small, barely palpable mass, giving one the impression of an adenoma of the lower pole of the thyroid. The chest and lungs were normal. The pulse rate was 120 at rest, and the heart seemed a bit enlarged to percussion.

The abdomen was pendulous and out of proportion to the rest of the body. The abdominal muscles lacked

tonicity. There were no masses. The liver, kidneys, and spleen were not palpable.

There was a marked bilateral bowing of the forearms. It did not appear that this was an illusion based on her emaciation. There was sensitiveness on pressure over the long bones. There was an atrophic dermatitis over both feet. All reflexes were hyperactive.

The urine showed: specific gravity 1012, albumin trace (2 plus on one occasion), sugar, casts and red blood cells negative. Bence-Jones protein negative, Sulkowich test for calcium 1 to 2 plus.

Blood examination: hemoglobin 76 per cent, white blood cells and differential normal, blood calcium 16.6 mgm., blood phosphorus 6.8 mgm., phosphatase 52.3, total protein 5.5 mgm., urea 51.8 mgm.

X-ray examination of the skull, pelvis, lumbar spine, and many of the long bones revealed changes in the skull which would be compatible with a Paget's type of osteitis. The changes in her long bones were those seen in an osteitis fibrosa cystica.

On August 22, 1942, a biopsy was taken from the left clavicle. Two days later this clavicle fractured spontaneously. The histologic section of this biopsy revealed changes in the bone compatible with osteitis fibrosa cystica.

We were having trouble in accurately diagnosing this case because the blood calcium was high, and the blood phosphorus was also high. We had expected to find the blood calcium high, and the blood phosphorus low. We were unable to account for the elevated blood-urea-nitrogen. There was no demonstrable calicification in the kidney. Because of the elevation we were inclined to think that the blood phosphorus was probably forced upward instead of downward as should have been the case in hyperparathyroid disease.

In spite of the discrepancy in the laboratory findings, we made preoperative diagnosis of a parathyroid tumor in the right lower pole of the thyroid. She was operated upon on August 25, 1942, through the usual thyroid incision.

The thyroid appeared entirely normal throughout. Posterior to the right lower pole, was a brownish red mass, measuring 3.5x2x1.5 cm. in diameter. It was well encapsulated and extended into a recess in the posterior wall of the thyroid where a small indentation presented about the size of a normal parathyroid gland. The main mass of this tumor was definitely growing outside of the capsule of the thyroid.

The histologic sections of this tumor revealed it to be a parathyroid adenoma. Its structure was composed largely of chief cells, mixed with areas of large vesicular cells. The cells of the water clear type were not seen.

Postoperatively this patient almost immediately went into parathyroid tetany. This was first manifest by restlessness, nervousness, and later emesis.

On the day after operation, the blood calcium dropped to 7.3 mgms, and the blood phosphorus was 5.4 mgm. Four days after the operation, the blood calcium was 6.3 mgms. The Sulkowich test for calcium in the urine was negative two days after the operation. The hypoparathyroidism after the operation was controlled with the administration of 1 c.c. of parathormone for two days. Following this the patient was controlled with synthetic parathyroid extract the dosage depending upon the presence or absence of calcium in the urine.

The wound healed without complications. The patient left the hospital, having been advised to take calcium, vitamin D and synthetic parathyroid extract. She has continued to improve and today has gained weight and feels in perfect health. The bones have returned almost to normal in their x-ray appearance.

Discussion

DR. R. C. WEBB: This case report of Dr. Rice is very interesting and well worked up. I believe this is the second proven parathyroid tumor to be presented to this society. In my case which I presented here nine years ago the tumor was located at the lower pole of the right lobe, the same as in Dr. Rice's case. In my series of lantern slides, subtrochanteric fractures of both femurs were shown. The left femur showed considerable erosion of the femoral shaft also. From these x-rays a diagnosis of parathyroid tumor was made immediately, and I explored the neck nine days later. The delay was chiefly due to a slight indisposition of the patient and initial management of the fractures. X-rays of the ribs and of the humeri showed typical osteitis fibrosa cystica. The skull showed the ground glass appearance seen in Dr. Rice's x-rays.

After the tumor was removed by exposing the thyroid in the usual manner the patient was placed in bed with the lower extremities in suspension and skin traction. Skeletal traction was out of the question because of the softness of the bones. She was given a general diet with extra milk and cheese, but she was given no extra vitamins, and the final slide shows the two femurs well healed and the bones restored to normal appearance.

Osteitis fibrosa cystica was first described in 1891 by Von Recklinghausen and in 1904 Askanazy reported a parathyroid tumor found in a case of Von Recklinghausen's disease. Unfortunately, it was suggested that the osteitis fibrosa cystica caused the parathyroid hypertrophy. Numerous papers were subsequently written on osteitis fibrosa cystica without further reference to the parathyroids. Parathyroid tumors were searched for at necropsies, and their association with skeletal changes was noted in published reports.

In 1925 Mandl in Vienna had a patient with osteitis fibrosa cystica and followed the twenty-year-old theory that the bone disease caused the parathyroid hypertrophy and he transplanted parathyroids into his patient. When his patient grew worse he removed the transplanted parathyroids and also removed a parathyroid tumor and his patient recovered. Since then we all consider the possibility of hyperparathyroidism in all cases of abnormal mobilization of calcium such as in osteitis fibrosa cystica and nephrolithiasis.

SOAP AND WATER PREPARATION OF LACERATED WOUNDS

R. C. WEBB, M.D.
Minneapolis, Minnesota

Efficient treatment of lacerated wounds is of steadily increasing importance at this time, when the problem of manpower on the home front as well as the battle front is all-important. After the skin has been lacerated and the tissues have been exposed to contamination and infection it is the surgeon's problem to obtain healing by primary union if possible and to return the patient to duty as early as possible. In some parts of the world today the care of even minor wounds is taking preference over other less urgent surgical problems.

There is considerable variation in the treatment of freshly lacerated wounds. It would seem that such an old surgical problem would be by this time at least as well standardized as a thyroidectomy or an appendectomy, but such is not the case. Practitioners are being constantly urged to use different attractive and labor saving antiseptics which may account for the different methods used by them. Interns, however, are also found to have their different favorite antiseptics.

The use of soap and water on lacerated wounds is not new. Some years ago Dr. A. W. Abbott spoke before this society on "Surgery in Pre-Antiseptic Days,"

and he said, "Some of us obtained better results than others, and I think it may have been because our mothers differed." For many years soap and water was an important part of the preparation of operative fields and in some places it is still the only material used in skin preparation.

During World War I, Alexis Carrel was showing that soap and water treatment of healing wounds not only kept them sterile but also enabled them to heal in a normal manner following the Du Nuoy curve of normal healing. In recent years numerous surgeons have written advocating the use of soap and water in lacerated wounds and among these the contributions of Koch have been most effective and convincing.

Studies on the bacteriology of recently inflicted wounds with special reference to hemolytic streptococci and staphylococci have been recently made and published by Ronald Hare of the University of Toronto. Hare found that a very small percentage of wounds were contaminated with these organisms within two hours after injury. Many non-pathogenic organisms were found, hemolytic streptococci. Thus, later streptococcal infections of wounds are thus due to later introduction of organisms from some outside source, unless the injured himself happens to be a carrier. About 7 per cent of the population are reported as carriers of Group A hemolytic streptococci. Thus later, streptococcal infection of the wound comes from the nasopharynx of the injured, the first aid attendant, the surgeon and his assistants or in the case of hospital infections, from other patients.

Staphylococcal infections come from organisms present on the skin of the patient and from exogenous sources chiefly from unmasked nasal carriers who comprise from 30 to 40 per cent of the population.

As a result of Hare's studies it appears obvious that a wound should be immediately covered with a sterile dressing before the injured person or any one else has had a chance to contaminate the wound with organisms from his or her nasopharynx and that thereafter the patient and the attendants should wear masks over the mouth and nose whenever the wound is exposed.

We now come to the question of the method of treatment of the lacerated wound. The ideal procedure should be one which would convert it from a contaminated wound into a clean wound. There should be no argument as to whether or not this should be done at the earliest possible moment. A contaminated wound can become an infected wound within a very few hours and it is then unsafe to close the wound. Koch places this safe period at no longer than two to three hours.

There appears to be two methods in use for the conversion of contaminated wounds into clean wounds. One method in common use is that of applying tincture of iodine or some other so-called antiseptic which fixes, coagulates and destroys the delicate tissues under the skin and not only delays the healing process but also frequently furnishes a sticky covering over a nidus of infective organisms and thus aids in the development of infection.

Too often this treatment is carried out in a so-called emergency room, the equivalent of a surgeon's office with inadequate facilities and inadequate assistance and separated from the operating room suite. The lacerated wounds frequently involve tendons, nerves, bones and joints, and the technical difficulties are frequently the equivalent of operations elsewhere in the body. Appendectomies and cholecystectomies have been performed on kitchen tables, but such surgery is no longer advocated.

The other method is that of the soap and water method of converting a contaminated wound into a clean wound. We believe that this is the best available method and that it is the only method which should be used when any of the important subcutaneous structures require surgical care.

Some surgeons have suggested that the soap and water method is dangerous because it is too often inefficiently applied. Koch says that it is simple, requires only patience and care, requires no unusual surgical ability and that it works.

My only criticism of the soap and water method is that it is time-consuming when one attempts to use it in a hospital where the technique is unfamiliar. One needs adequate facilities and adequate assistance, and when the nursing staff has learned the technique one can proceed as rapidly as with any other surgical procedure of equal importance.

The difficulty lies in the fact that no surgeon ordinarily gets many important lacerated wounds; he struggles through the soap and water method with or without the use of additional antiseptics and sulfa drugs, and if he gets an indifferent result he forgets it by the time the next case appears and the process is then repeated with variations.

In many of the articles advocating the soap and water preparation of wounds the details of the method are either omitted entirely or are incompletely described. The result is that the operating room nurses are apt to be unaware of the surgeon's desires. The cases come in at odd hours; the operating room personnel is constantly changing and the nurses may not know what to expect.

We have prepared an operating room routine for such cases in order to correlate our own procedure and to give the nurses advance notice of what is wanted. We have found that once the operating room nurses are given this procedure in advance that both the surgeon and the nurses find the procedure simple, satisfactory and easy to apply, and the after-results prove that it works.

Operating Room Routine for Contaminated Wounds of the Hand, Wrist and Forearm

1. *A first setup of sterile green soap, brushes and irrigating solution for a five-minute scrub of skin, about the first aid dressing, from elbow to fingers and a manicure of the fingers. Masks over mouth and nose are worn by operating room personnel, and by the patient.*

The patient arrives in the operating room with a first aid dressing and perhaps a tourniquet on his arm. The tourniquet is removed and a blood pressure cuff is applied. If bleeding occurs the cuff is kept inflated to 250 mm. mercury as directed by the surgeon. The exposed skin of the fingers, hand and forearm is given a five-minute soap and water scrubbing and manicure of the

fingernails, by the nurse or intern, while the surgeon is scrubbing up. (The first aid dressing is not removed during this first step).

2. *A second fresh setup of sterile green soap, brushes and irrigating solution for a second five-minute scrub of the skin about a fresh sterile dressing.*

The surgeon removes the original first aid dressing at this time and examines the wound for bleeding, et cetera, and the blood pressure apparatus is inflated or deflated as indicated. A fresh sterile dressing is now applied to just cover the wound and is bandaged in place. The surgeon resumes scrubbing his hand and the nurse or intern gives a second five-minute soap and water scrub and irrigation to the exposed skin of the hand and forearm. Masks and gloves are worn.

3. *A third fresh setup of sterile white soap or neutral green soap, brushes, gauze and cotton pledgets, forceps and irrigating solution for a third five-minute scrub and irrigation of the skin about the exposed wound.*

The dressings are now entirely removed, and the hand is lying on a sterile towel on an arm board. The patient is given a general anaesthesia usually. Masks and gloves are worn, especially at this stage. The surgeon or his assistant scrubs the skin about the wound using brushes or gauze or cotton pledgets and sterile white soap, and the wound is continuously irrigated during this procedure to minimize or prevent additional contamination.

4. *A fourth fresh setup of sterile white soap or neutral green soap, irrigating solution, two bulb syringes, gauze sponges, cotton pledgets, instruments for handling gauze and cotton, and a small tray of instruments for debridement operation. The thoroughly scrubbed hand and forearm are placed on fresh sterile towels and draped.*

The patient is under anesthesia; a blood pressure cuff is on the arm, and the forearm is draped. The surgeon is scrubbed and masked and has on fresh sterile gown and gloves, and he now again irrigates the wound and may scrub the wound using sterile white soap and gauze pledgets in forceps. The surgeon then performs a "debridement" operation, excising the skin edges and devitalized underlying tissues and continues to irrigate the wound and surrounding skin.

The nurse supplies him with a small tray of instruments for the "debridement" operation, and she keeps herself and her larger instrument table uncontaminated.

5. *In case tendon, nerve, bone repair or other operation is necessary, a fifth setup of irrigating solution from a stand or with bulb syringes, cotton pledgets, and instruments, for irrigating the wound, and fresh gown and gloves for the surgeon. The wound is now draped for operation. The instrument nurse and instruments are ready.*

The surgeon now puts on fresh gloves and gown and proceeds with the necessary operation and the instrument nurse now assists in the usual manner as with a clean operation except that the irrigation is continued as indicated during the operation.

The use of a set of such directions for lacerated wounds of the hand in a private hospital serves as a basis for teaching the student nurses and it becomes easy to extend the technique to wounds elsewhere and to compound fractures. These directions may appear complicated and formidable at first glance, but parts one and two are no more time-consuming or detailed than the preoperative preparation for a simple laparotomy, and they are at least equally important to the patient. The third step is a continuation of the first two steps after an otherwise sufficiently wide clean field has been prepared. As a rule the surgeon wishes to carry out this final preparation of the skin. The fourth step now deals with the wound itself after the surrounding skin has been prepared and it is merely good housekeeping to have a fresh setup.

In the course of the debridement operation we are contaminating our gloves and our instruments while removing the contaminated parts of the wound. The fifth step is essential to good technique if delicate reconstructive work is to be carried out.

Several surgeons have expressed the opinion that if they themselves had a complicated wound that they would want all five steps meticulously followed but they doubt their ability to get their operating room forces to adopt such a complicated procedure.

However, the procedure is not as complicated as it appears on paper and when nurses have had experience with it they not only do not object, but they become advocates of the technique.

This discussion has been limited to fresh, recently lacerated wounds less than three hours old. The methods essentially as outlined here have been used by the writer satisfactorily since World War I. Since Pearl Harbor we have seen a greatly increased number of such cases and we are more than ever convinced of the use and value of the procedure. From an economic standpoint it is clearly seen that the time saved by the injured more than offsets the time and expense spent in the treatment. Also these patients recover in comfort.

Summary:

Lacerated wounds should be immediately covered by a sterile dressing snugly applied.

Protection of the wound against nasopharyngeal infections from the patient or from attendants should be provided constantly.

The wounds should be considered as emergencies and surgical treatment should be carried out within two hours.

Adequate facilities and adequate assistance are essential to proper care of such patients.

The soap and water preparation of lacerated wounds is simple and easy to apply and produces the most satisfactory results.

Discussion

DR. WILLARD D. WHITE: One of the important things in these cases is covering the nose and mouth with a mask. That statement is made frequently. Nevertheless it is not unusual to see a person in the operating room without a mask. He may be a spectator, perhaps a doctor who steps in for a minute or two, shows evidence of interest in the case, asks a few questions and makes comments. He is apt to get up close to the wound in order to see the details and if he talks without his face being covered there is an excellent chance that he is implanting a droplet infection into the wound. This point bears repeated emphasis. This very day I was operating on an injured hand. Everyone in the operating room had his face covered with a mask till one of my doctor friends came in and got quite close to the instrument table facing the direction of the wound and managed to say a few sentences before he was requested to get a

mask on. He apologized profusely and stated that he would be the first to complain if someone did the same thing while he was operating. It merely was a bit of carelessness but the consequences can be very serious and very important to the patient.

Dr. Webb has discussed his method of soap and water preparation. It does sound somewhat complicated. To me it is less so if instead of having five different basins, I use one basin with clear water and another one with soap and a pile of sterile sponges that are to be used for the scrubbing. With a sterile instrument a sponge is picked up and moistened in the basin. Soap is used with this. The sponge is discarded after using and the process is repeated. Doing it this way the basin is not contaminated by dipping into it because each time it is done with a sterile forceps. After this preliminary scrubbing an irrigator is used for further scrubbing in and around the wound. The debridement is done. The instruments used for this and the gloves used are discarded and a new sterile setup is used for the repair of tendons or other tissues requiring repair.

Dr. Carl O. Rice: I think this paper was splendid. One thing that has impressed me for a number of years, since the sulpha drugs have become popular, is that the use of these drugs in compound wounds and fractures has left doctors, and now soldiers, with a false impression, that if they throw in some sulphanilamide, they are safe from all infection. This is wrong. If those authors, dealing with the use of sulpha drugs in compound wounds, had titled their papers somewhat after the fashion of this dessertation, and then put in a paragraph or two relative to the supplementary use of sulpha drugs, I believe that we would have accomplished much more, in the care of compound wounds. I believe that the prime factor in the care of a compound wound is proper cleansing, and that the use of sulpha drugs in a wound is more or less supplementary.

Dr. S. R. Maxeiner: Wound irrigation added to the soap and water preparation we believe is extremely helpful in ridding the deep surfaces of contamination. Twice recently we have had the efficiency of wound irrigation proven to us. The first was a gunshot accident in which a boy of seventeen was shot in the buttock at very close range. There was a very large wound of entrance but no wound of exit. We did a very thorough soap and water cleansing, enlarged the wound of entrance and did a mechanical debridement. After the wound was as thoroughly clean as we could render it through this enlarged wound of entrance, we decided to make a counter opening on the opposite side of the leg. Irrigation was started through the counter opening and came out through the gunshot wound of entrance. To our great surprise two large gunshot wads, ¼ inch thick, made of felt to fit a 12 gauge shotgun, were washed out from the depth of the wound. These wads would never have been found nor removed except by irrigation and in this instance, through a counter opening.

Recently, at the beginning of the duck season a patient was brought to us who had had a gunshot wound of the forearm completely closed. He was hospitalized and the wound reopened. The muscles were badly contused and minced by the penetrating shot. Many of the muscles had the appearance of pheasant breast in which feathers have been carried into the tissues. During the process of debridement and irrigation, the fine bits of cloth and leather from his clothes which had penetrated with the shot were removed and again, a large shotgun felt wad was washed out by irrigation through a catheter.

We use sulfanilamide on these people only after thorough cleansing and debridement. I think Dr. Rice is correct in his statement. I know that the work of Dr. Webb has been very well received and is a splendid contribution to be considered at this time.

At Asbury Hospital we had a staff meeting given over entirely to the care of emergency cases which might arise in a major catastrophe. We attempted to adopt some type of standardization which would simplify care in the hospital if thirty to fifty emergency cases were suddenly brought in and cared for by perhaps twenty different methods. The surgical committee felt there should be some standardization adopted by the staff which would permit more efficient care of a large number of patients and the nurses and personnel would know what to do for burns, lacerations, head injuries, etc. A symposium was arranged at which time these standardized procedures were presented to the Asbury Hospital Staff and recommended for general use in a major catastrophe, no matter who was taking care of the patient. A suggested technique similar to that used by the navy at Mare Island was advocated for the use of burns. The soap and water cleansing was advocated for the treatment of lacerations and other standardized procedures were recommended for similar conditions.

Dr. R. C. Webb (closing): This set of directions for the soap and water preparation of lacerated wounds has been recommended by a committee to the staff of one of our hospitals and approved along with several other procedures recommended by other committees for use in case of a catastrophe here. The staff of course understands that this is only a minimum standard of careful technique and thoroughness and everyone is privileged to be more thorough and more careful.

The question of not cleaning more than a few inches about the wound has been raised. The initial first aid dressing is not removed at the beginning and the nurses scrub a wide area on both sides of the dressing. The wound is still protected and this wide cleansing is obviously not only not harmful, but it may be valuable in case one has to extend the incision to find a tendon for example. We want a wide area with plenty of clean skin and the area properly draped with sterile towels.

Brushes are used on the skin only, as a rule. Brushes are rarely used subcutaneously. Cotton pledgets are usually all that is necessary on the subcutaneous structures.

The use of sulfa drugs has been mentioned. Sulfa drugs are no doubt of value, but they should not be used as a substitute for careful technique. Sulfa drugs around a tendon repair produce excessive adhesion formation. We have been so impressed with the excessive adhesion formation in some of these wounds where sulfa drugs were used that we have considered putting sulfa drugs in wounds where good adhesions were wanted. Although we have never used the injection treatment for hernia repair we have been so influenced by the exponents of the injection treatment of hernia that we have sprinkled sulfanilamide crystals in a few hernia incisions while performing surgical repair, hoping thus to give the patient the advantage of both methods of treatment.

The value or necessity of the five sterile setups has been raised. If you are to use the soap and water method carefully and safely you must give the nurses assisting you a plan or they must learn your method the hard way. It is easier to give them such a plan ahead of time. If the surgeon finds that he can eliminate any part of the plan in any particular case, that of course is his privilege. It is readily seen for example that many cases will only require the first three setups.

I am glad that Dr. Merkert mentioned the importance of injecting local anesthetics through the skin at a distance from the wound. Local anesthesia should not be injected through these open wounds. We hope to get these wounds surgically sterile. By that we mean sterile enough so that the body can take care of any remaining organisms. A wound should be bacteriologically sterile before injecting local anesthetics through the exposed raw sides of the wound and risking the carrying of organisms with the needle into the surrounding tissues.

Minnesota Academy of Medicine

Meeting of October 13, 1943

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Minneapolis Club on Wednesday evening, October 13, 1943. Dinner was served at 7 o'clock and the meeting was called to order at 8:15 by the President, Dr. H. B. Zimmermann.

There were forty-seven members present.

Minutes of the May meeting were read by the Acting Secretary, Dr. A. C. Schulze, in the absence of Dr. Kenefick who is now in service.

Dr. Zimmermann announced that arrangements had been made with the Minneapolis Club and the Minnesota Club to hold alternate meetings in Minneapolis and St. Paul, providing the attendance did not run over 50 plates for dinners.

The scientific program followed.

ROENTGENOLOGIC OBSERVATION ON BRONCHIAL OCCLUSION

LEO RIGLER, M.D.
Minneapolis, Minnesota

Dr. Rigler, Chief of Department of Radiology of the University of Minnesota, read his Inaugural Thesis on the above subject.

DR. RIGLER: May I express my appreciation at being elected to this Academy. It is an honor which no Minnesotan would readily forego if he had the opportunity to attain it.

Abstract

Obstruction of the bronchi may produce such a multiformity of phenomena that adequate roentgen study is imperative for their demonstration. The character of the changes produced will depend upon the nature of the occluding mechanism, the rapidity of the obstruction, its duration, and the location—whether in the large or small bronchi. The occluding mechanism may be intrabronchial such as foreign bodies, tumors, constrictions of inflammatory origin, accumulation of bronchial secretion with the formation of mucous plugs, or extrabronchial, such as aneurysms, cardiac chamber enlargements, and mediastinal tumors. As a result of these various types of bronchial obstruction there may occur pulmonary emphysema, atelectasis, drowned lung, abscess, bronchiectasis. A complete roentgen examination may necessitate fluoroscopy, roentgenograms made in inspiration and expiration in the postero-anterior position, films in various other positions such as obliques, laterals, lordosis, supine, bronchography with iodized oil, and body section roentgenography. The addition of the latter two methods will enable the determination not only of the pathological process in the lungs which results from the obstruction but also accurate information as to the nature of the obstructive process. A review of cases will indicate the manner in which the various x-ray procedures are used and the detailed information which can be obtained. The possibilities of surgical treatment of the various types of bronchial obstruction make it imperative to utilize every means at our disposal for the accurate delineation of the pathological process.

Discussion

DR. R. G. ALLISON, Minneapolis: I would like to congratulate Dr. Rigler on his very able and comprehensive presentation of this very interesting subject.

I became interested in chest diagnosis some thirty years ago at Saranac Lake. It was my privilige to teach what I had learned at Saranac Lake to the late Dr. Willis Manges of Philadelphia who was the first radiologist to describe both atelectasis and obstructive emphysema in non-opaque foreign bodies in the air passages. Following Manges' observation, the literature became flooded with reports of tumors, malignant and benign, which produced the same findings.

Shortly after this, Forriestier in France developed lipiodol. Bronchograms then became the order of the day in cases where the diagnosis was doubtful. Development of the planagraph several years ago gave the radiologists another valuable ally.

I agree with Dr. Rigler that with the use of lipiodol and body section radiography, it is possible to recognize many minute tumors which remain beyond the reach of the bronchoscope. While bronchoscopy often gives us very positive biopsy evidence, I feel that too much reliance has been placed upon negative bronchoscopy.

I have seen many cases not diagnosed by the clinician until distant metastases appeared in spite of repeated positive x-ray findings.

DR. C. B. DRAKE, Saint Paul: Did the emphysema that was shown in these x-ray films disappear in many cases; was it just an acute form?

DR. RIGLER, in closing: Dr. Geer asked if I would like to make a distinction between a benign and malignant tumor of the bronchus on the basis of x-ray examination alone. I think it can be done without bronchoscopy, but I would like to have bronchoscopy for confirmation whenever possible.

The value of the biopsy in the distinction between carcinoma and adenoma and, in fact, in the demonstration of carcinoma of the bronchus goes without saying. Undoubtedly, it is the best evidence we can get. I hope I did not give the impression that x-ray examination was the only means of diagnosis. But when a patient comes in with a classical history, with or without physical findings, and with characteristic x-ray evidences of carcinoma, the chances of being right are extremely high, especially if bronchography has been done and a characteristic type of obstruction of the bronchus found. There is undoubtedly a small percentage of error, and some risks must be taken. On the other hand, if we must wait for bronchoscopic biopsy to be positive, we are going to miss the diagnosis in a considerable number of cases, particularly of course if the lesion is in the upper lobe. Some years ago I reviewed a hundred cases of carcinoma of the lung and found that the bronchoscopic findings were positive in but 20

per cent. Graham is disinclined to operate on patients with carcinoma of the lung unless they have a positive biopsy. In his institution they do as many as twenty or twenty-five bronchoscopies on one patient in the hopes of obtaining a positive biopsy. Nevertheless, I still believe that if we had to rely upon this always, the number of cases that would be available for surgery would be very small. The difference between an adenoma and a carcinoma, of course, is very difficult to decide, even after biopsy has been done. If one is certain that there is a tumor and if the clinical indications are such as to indicate surgery, I think it should be undertaken and the surgeon can determine at the time of exploration whether or not lobectomy or pneumonectomy should be done, depending on whether or not it is an adenoma or a carcinoma.

I think Dr. Geer misunderstood my reference to atelectasis. I was referring to the occurrence of atelectasis in bronchial asthma rather than in bronchiectasis. I think you do get atelectasis from time to time in bronchiectasis, but I am not at all certain that all of these acute attacks which bronchiectatic patients get are due to atelectasis. In bronchial asthma, however, I think the majority of attacks which are thought to be pneumonia can be proved to be atelectasis. In fact, I think some of the patients with bronchial asthma have as their final cause of death a massive atelectasis.

In answer to Dr. Drake, let me say that the acute emphysema such as I showed in cases of foreign bodies, or even in cases of bronchial asthma, will return to normal. Some years ago I saw a case of acute obstructive emphysema of one lung from a foreign body in a child which was so marked that it pushed the thymus away from the mediastinum well up into the chest. As soon as the foreign body was removed the emphysema disappeared and the thymus was restored to its normal position. Some of these emphysemas will remain for some period of time, having been recorded as persisting for several months. The longest one I have followed, which was the result of a foreign body, was about five weeks. When the foreign body is removed, the lung goes back to normal.

The meeting adjourned.

A. G. SCHULZE, M.D.
Acting Secretary

✦ Reports and Announcements ✦

AMA SCIENTIFIC EXHIBIT

The scientific exhibit at the Chicago session of the American Medical Association, June 12-16, 1944, will be held at the Palmer House. Exhibits will cover all phases of medicine and the medical sciences with particular emphasis on graduate medical instruction for the physician in general practice.

Application blanks for space in the scientific exhibit are now available and may be obtained by communicating with the Director, Scientific Exhibit, American Medical Association, 535 N. Dearborn Street, Chicago 10, Illinois.

AMERICAN BOARD OF OPHTHALMOLOGY

Examinations will be held by the American Board of Ophthalmology in New York City in June, 1944, and in Chicago in October, 1944. Applications for the June examinations must be filed by December 15, 1943, and those for the October examinations by April 1, 1944. All applications received after January 1, 1944, will be subject to the increased fee of $75.00. The Board headquarters are at 6830 Waterman Avenue, St. Louis, Missouri.

CONTINUATION COURSE IN OTOLARYNGOLOGY

The University of Minnesota Medical School, Division of Otolaryngology, announces its bi-annual Continuation Course in Otolaryngology February 7-11, 1944. This course is clinical and registration is limited to fifty physicians practicing otolaryngology as a specialty. The course will be conducted by members of the Graduate School Faculty of the University and the Mayo Foundation. A guest faculty will include Dr. Oscar Batson of Philadelphia, Dr. Paul Holinger and Dr. John Lindsay of Chicago, and Dr. Theodore Walsh of St. Louis. The tuition is $25.

Accommodations will be reserved for registrants in a Minneapolis hotel because the Center for Continuation Study is now occupied by men in military training. Early registration is desirable. Apply to Dr. W. A. O'Brien, Director Postgraduate Medical Education, University Hospital, Minneapolis, Minnesota.

MINNESOTA SOCIETY OF NEUROLOGY AND PSYCHIATRY

The regular dinner meeting of the Society was held at the Minneapolis Club, November 12, 1943.

The program included the following papers:

Acute Ascending (Landry's) Paralysis—J. C. Michael, M.D.

Healing of Brain Wounds—J. W. Kernohan, M.D.

Officers elected for the coming year are:

Walter P. Gardner, M.D., Saint Paul, president; James W. Kernohan, M.D., Rochester, vice president; Royal C. Gray, M.D., Minneapolis, secretary-treasurer.

WASHINGTON COUNTY

The Washington County Medical Society held its monthly meeting on November 9, 1943.

The Stillwater doctors are planning to give the Mantoux test in the city schools to the pupils in the 7th and 8th grades because it has been discovered they have been exposed to an open case of tuberculosis.

The Sharp and Dohme Normal Human Plasma Film was presented as part of the program. Everyone present seemed to enjoy it, the film being highly instructive.

In the "Chronic Fatigue" of Mild Depression

After employing Benzedrine Sulfate therapy in a series of 40 patients diagnosed as suffering from nervous exhaustion, Nathanson concludes:

"In approximately 80 percent of the patients there was a marked amelioration of this symptom (fatigue). Many of the patients had complained of fatigue for long periods and had tried various types of treatment without benefit . . .

"A sense of increased energy and capacity for work was noted in more than half of the cases. In addition a feeling of exhilaration and sense of well being was a consistent effect . . . Many patients volunteered that there had been a definite increase in mental activity and efficiency." Nathanson, M. H.—J. A. M. A., 108:528, 1937.

Benzedrine Sulfate Tablets

Brand of racemic amphetamine sulfate

Benzedrine Sulfate is primarily useful in depressions characterized by apathy and psychomotor retardation, but is contraindicated in patients manifesting anxiety, hyperexcitability, or restlessness.

The use of Benzedrine Sulfate by normals should not be permitted; it should always be administered under the careful supervision of a physician; and depressive psychopathic cases should be institutionalized.

In treating depressed patients with Benzedrine Sulfate, the physician should bear in mind that any drug which produces pleasant or euphoric effects may prove to be habit forming—especially in unstable or neurotic individuals

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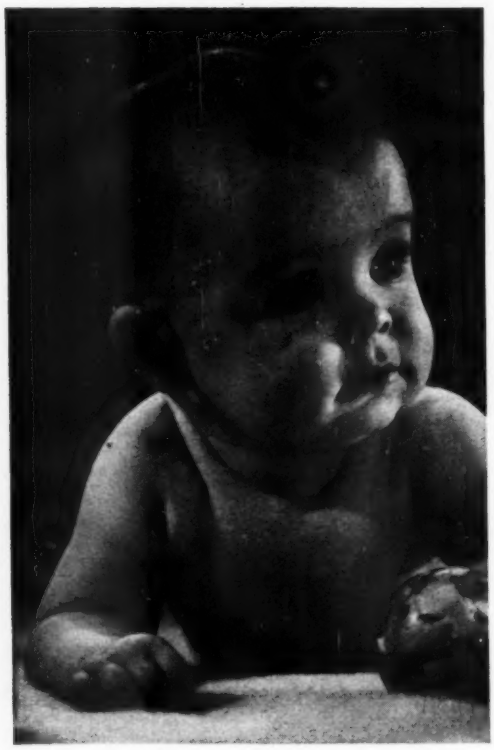

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WOMAN'S AUXILIARY

MRS. F. S. MCKINNEY, *President*
Minneapolis, Minnesota
MRS. J. R. AURELIUS, *Publicity Chairman*
Saint Paul, Minnesota

STATE NEWS

The year's activities of the State Medical Auxiliary began in earnest when the Board gathered at the Radisson Hotel, October 22, for the fall board meeting. A war service program was the topic for the session.

After the business meeting, at which Mrs. F. S. McKinney presided, the group were privileged to hear the members who are heading up the three major projects. Mrs. Claude Kennedy of Minneapolis explained the aims of the Medical and Surgical Relief Committee and urged all counties to assist in collecting discarded instruments and samples of drugs and other supplies.

Mrs. Harlow Hanson of Minneapolis outlined plans for the individual counties in aiding the emergency nursing committee and Mrs. Ivar Sivertsen, Minneapolis, chairman of the Speakers Bureau, presented the cadet nurse plan.

Mrs. Frederick H. K. Schaaf and Mrs. John Curtin of Minneapolis were in charge of the luncheon, after which Mrs. L. R. Boies of Hopkins and Miss Inez Hobart of the University of Minnesota discussed nutrition and canteen work.

RAMSEY COUNTY

The medical auxiliary opened its new season in October after a summer vacation from meetings for its membership. A lovely informal tea was held at the home of Mrs. Gordon Kamman of St. Paul. A rigid program of Red Cross work has and will continue to occupy members for the duration.

Honors were shared by the past presidents—Mrs. Lloyd Dack, Mrs. Harry Zimmerman, Mrs. A. G. Schulze, Mrs. Mark Ryan, and the new president, Mrs. Charles Waas, and State president, Mrs. F. S. McKinney.

NICOLLET-LE SUEUR

The Nicollet-Le Sueur auxiliary met with the counties' medical society at a dinner in October at the Burton Hotel in Mankato. Following the dinner, the women gathered at the home of Mrs. Hobart Johnson to hear a review of recent books by Dr. G. F. Petterson, professor of sociology at the Mankato Teachers College. Later in the evening the doctors rejoined their ladies for a social hour at the Johnson home.

HENNEPIN COUNTY

Thirty-one charter members of the original eighty-two members of the Hennepin County Medical Auxiliary were honored guests at a tea on October first at Mrs. A. E. Benjamin's home. Mrs. Harold Wahlquist, president, greeted the pioneers, after which the program was devoted to a review of the organization's 33 years of philanthropy, fraternity and health education. Mrs.

W. J. Byrnes, first president, elected October 10, 1910, gave reminiscences and told of the aims of the group which was the first medical auxiliary in the United States. Fashions of 1910 were worn by many of the members.

Mrs. F. S. McKinney and Mrs. John Curtin presented a little skit depicting two early members making their very elaborate preparations to attend a 1910 meeting.

At the November meeting the dentists' wives were honor guests to hear Gideon Seymour, editorial editor of the *Minneapolis Star-Journal,* speak.

Invitations were also sent to visiting doctors' wives whose husbands are in the service stationed at Fort Snelling, Wold Chamberlain Airport, and the University.

A Chinese Tea arranged by Mrs. Richard Lindquist completed the afternoon's entertainment.

On November 11, 12, and 13 the women of the auxiliary again sponsored the sale at the Dayton Company, of articles made by Glen Lake Sanitorium patients. Mrs. John Curtin was chairman of the sale and other auxiliary members acted as saleswomen. All proceeds are returned to the patients; this year's receipts totaled more than $2,000.

Plastic foil bags now hold fresh, cleaned green vegetables. The vegetables, all prepared for cooking, are protected from mold, germs, insects and moisture. These transparent bags are made of the same plastic as are warplane turrets.—*Science News Letter,* November 27, 1943.

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Of General Interest

Dr. W. W. Brown of Minneapolis is taking care of the practice of the late Dr. A. R. Johnson at Isanti.

* * *

Dr. V. I. Miller, who had been incapacitated because of illness, has resumed his practice at the Mankato Clinic.

* * *

Dr. B. T. Horton of Rochester was elected president of the Minnesota Society of Internal Medicine at the annual meeting held in Saint Paul.

* * *

Dr. C. A. Williams of Pipestone was elected president of the Southwestern Minnesota Medical Society at the annual meeting held at Worthington in November.

* * *

Dr. W. McKechnie, who has been a member of the staff of the St. Peter State Hospital for the past sixteen years, retired from practice on November 1.

* * *

Dr. Cecil J. Watson was elected president of the Central Society for Clinical Research at the November meeting of the Society.

* * *

Dr. Titus Kreuzer of Marshall has been appointed by the State Selective Service as a member of the Medical Advisory Board for southwestern Minnesota in the field of eye, ear, nose and throat diseases.

* * *

Major James J. Smith, M.C., of Saint Paul has been awarded the Legion of Merit at London for formulating an air-sea rescue system which has saved "A great number of lives of combat (air) crews."

* * *

Dr. Miland E. Knapp of Minneapolis, clinical assistant professor of Radiology and Physical Therapy at the University of Minnesota, is the new president-elect of the American Congress of Physical Therapy. He was elected to the office at the recent Chicago meeting.

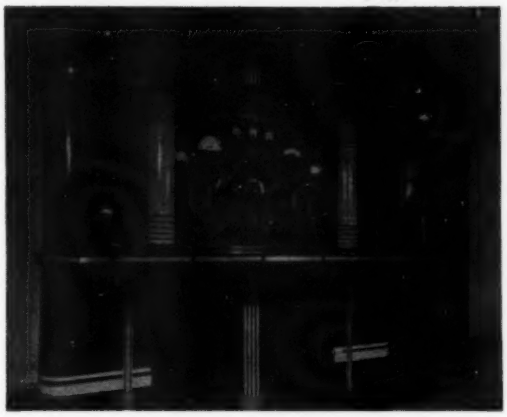
* * *

Dr. Stanley B. Lindley, assistant superintendent of the Fergus Falls State Hospital for the past four years, has been appointed superintendent of the Willmar State Hospital, according to announcement received from Carl H. Swanson, director of state public institutions.

* * *

Dr. H. F. Krusen of Rochester has been appointed Director of the Branch Committee on Physical Medicine, with headquarters in New York City. The Committee will attempt to complete a survey to determine present needs in the field of physical medicine.

Radiation Therapy Institute



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Dr. Howard G. Johnson of Ortonville has moved to Bird Island where he has taken over the practice of Dr. L. D. Bushard, who recently became associated with Dr. Frank Burch in Saint Paul. Dr. Johnson will also be associated with the Rice Memorial Hospital at Willmar and will be associated there with Dr. R. J. Hodapp.

* * *

The businessmen of Grove City have purchased a residence in that village for the use of a resident physician. Dr. J. Y. Feinstein, who left Grove City to enter military service, is expected to resume practice in the near future, having received an honorable discharge because of his health.

* * *

Dr. G. A. Hedberg, Nopeming, Dr. D. A. Munro, Duluth, and Dr. R. E. Johnson, Crookston, were elected directors-at-large of the Minnesota Public Health Association at the annual meeting held in Saint Paul. Dr. F. E. Harrington of Minneapolis was elected president.

* * *

Lieutenant William W. Wood, Jr., M.C., USNR, is now in Australia. He was promoted to the commission of full lieutenant October 1. Lieutenant Wood is a graduate of the Class of 1937, University of Minnesota, and was a Fellow at the Mayo Clinic, Rochester, before entering the service.

* * *

Dr. M. Fording Fellows of Duluth has been promoted to the rank of Commander. He is serving with the Fleet Marine Force as Training Center Surgeon at Camp Joseph H. Pendleton, Oceanside, California. Dr. Fellows was a member of the Minnesota Naval Reserve before entering active service at the U. S. Naval Hospital at Bremerton Washington, in 1941. He was assigned to Camp Pendleton following duty aboard a heavy cruiser in the South Pacific area.

* * *

The Russian War Relief is making a plea for medical books for shipment to Russia to aid in the training of physicians. The list of books desired covers not only books on military medicine but those in the field of tuberculosis, pneumonia, dietetics, child psychiatry, stomach diseases, occupational therapy, psychology and mental hygiene. A few works on cattle and insect diseases also are desired. Books donated should be sent to Russian War Relief, 11 East 35th Street, New York 16, N. Y.

* * *

Word has been received that Major Maurice Walsh, M.C., A.U.S., is neuropsychiatric consultant of the 13th Air Force. To gain some practical experience, he accompanied bombing squadrons on several missions over Japanese territory. When on a recent mission the plane he was in was attacked by zeros. Splinters of a 20 mm. shell wounded the tail gunner and punctured Major Walsh's left foot. During the action Major Walsh cared for the tail gunner.

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BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

MONOGRAPH ON LYMPHOGRANULOMA VENEREUM. 32 pages. New York: E. R. Squibb & Sons, 1943.

Noteworthy contributions to the detection and differential diagnosis of lymphogranuloma venereum are those of Rake, McKee, and Shaffer, who have cultivated the agent in the yolk sac of the embryonated chicken's egg and obtained concentrated suspensions of elementary bodies. In this manner a highly purified and specific antigen, known as Lygranum S.T. has been prepared which is rapidly supplanting antigens prepared from either human pus or mouse brain. These workers alone, and in collaboration with Dr. A. W. Grace, have used the yolk sac antigen for the complement-fixation testing of serum of suspectedly infected patients. The specificity and sensitivity of this antigen (Lygranum C.F.) provides an additional means of detecting early cases of lymphogranuloma venereum.

In the course of investigations involving these tests, there accumulated at the Squibb Institute for Medical Research a considerable mass of information concerning the properties of the causative agent, the epidemiology and clinical aspects of the disease. To facilitate the work of investigators and teachers in this field, and perhaps to encourage the interest of potential inticing physicians and health officers, it was decided to compile and publish the information at hand. The result is a thirty-two page publication entitled Lymphogranuloma Venereum—a Monograph. The value of the book is enhanced by maps, charts and numerous illustrations in color.

The Monograph is available gratis to physicians and to public health officials, and will be a valuable addition to medical college libraries. Those who request copies should use their professional letterhead and address E. R. Squibb and Sons, 745 Fifth Avenue, New York 22, N. Y.

AN INTRODUCTION TO MEDICAL MYCOLOGY. By George M. Lewis, M.D., and Mary E. Hopper, M.S. Pp 342. 2nd ed. Price $6.50. Chicago: Yearbook, 1943.

The authors have produced something new—a work on mycosis, something that has been greatly needed, especially in the last twenty years. Investigations on this matter have progressed at a rapid pace and reports thereon have been voluminous. Previously, these reports were scattered through the different medical journals and to get anything worthwhile quite a hunt through the literature would have to be made. Now, all

(Continued on Page 1106)

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this matter can be had in one volume, collected and written so that it is quite easily absorbed. This work is of value to both the clinician and the laboratory man. For the former there are a good many photographs on almost all types of mycosis, elaborating on the ordinary and treating also the rare. From these pictures one gets a clear idea of dermatosis mentioned, making it a little easier to recognize the condition. The differential diagnosis given in the book on the various conditions is quite good. The treatment is well handled, covering both drug therapy and radiation. As for the laboratory man, he can find a complete tabulation of most mycotic organisms encountered. The work is divided into a consideration of the superficial and the deep types. Also a complete clinical characteristic appearance of each is given. A considerable space is devoted to the laboratory methods, culture, et cetera for identification of the organisms.

All in all one cannot help but feel that dermatology has been greatly benefited by the introduction of this work and men doing dermatology as well as laboratory workers will find this most useful and valuable.

E. Z. SHAPIRO, M.D.

PICTORIAL HANDBOOK OF FRACTURE TREATMENT. By Edward L. Compere, M.D., F.A.C.S., and Sam W. Banks, M.D., 351 pp., 171 illus. Chicago: Year Book Publishers, Inc., 1943.

This book is written for the busy practitioner as a guide in treating the common injuries of bones and joints. Under the heading "General Considerations of Treatment of Fractures and Dislocations" are brief discussions of fracture pathology, fracture healing, diagnosis and emergency treatment, anesthesia, reduction, immobilization and general principles of care, compound and infected fractures, non-union, pathologic fractures, et cetera.

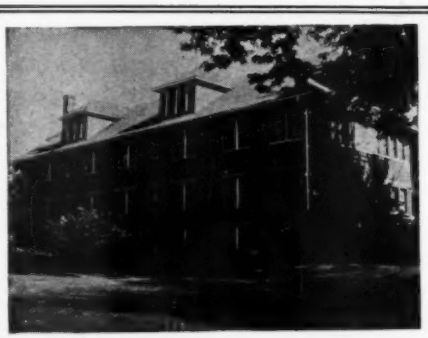
Fractures and dislocations of the various parts of the extremities and trunk are described with particular emphasis on treatment. Management of such injuries by methods which are simple and yet adequate is an important feature of this work. Highly technical procedures are omitted. Many of the illustrations consist of a series of diagrams, showing in detail the proper steps in reduction and immobilization.

This book is considered a valuable aid for the physician who is required to treat injuries of this nature.

R. J. DITTRICH, M.D.

OUTLINE OF ROENTGEN DIAGNOSIS. Leo G. Rigler, M.D. 2nd ed. Price $6.50. Philadelphia: J. B. Lippincott Company. 1943.

The second edition of this very popular outline of roentgen diagnosis has now appeared five years after publication of the original edition showing a rather complete revision as dictated by the continual changes in the field of roentgen diagnosis.



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To this second edition has been added discussion of the newer procedures of kymography, planigraphy or body section roentgenography, photofluorography, contrast cardiography and myelography as well as others. New disease entities and syndromes have evolved in this five-year period and have been included in the new text, notably the consideration of sarcoidosis, blood dyscrasias in childhood, hemophilia, renal rickets, coccidiosis, myocardial infarction, constrictive pericarditis and others. The atlas form of grouping the excellent figures and their legends has been retained as in the original text.

This new edition, so completely brought up to date, continues to be a most useful outline of roentgen diagnosis and is particularly valuable for students and teachers of roentgenology.

J. Richards Aurelius, M.D.

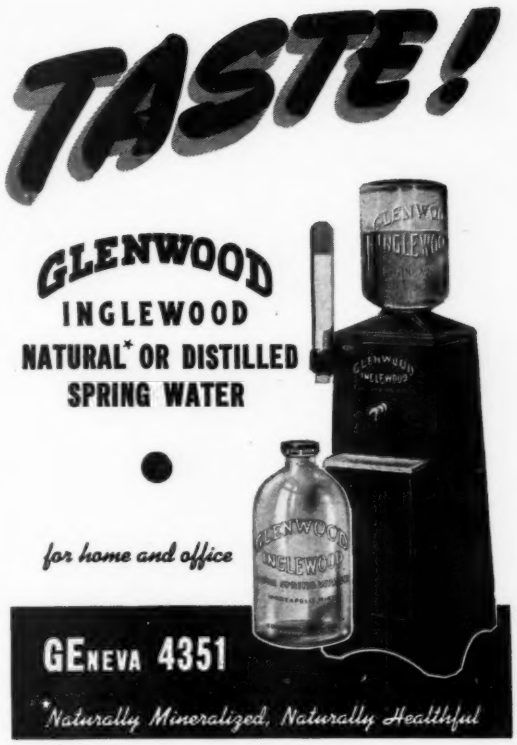
NEW CANCER CLINIC OPENED IN MEXICO

When a little girl broke open her piggy bank and took her whole treasure of carefully saved centavos to government officials to help build a projected cancer clinic, grown-up citizens of Guadalajara, Mexico, broke with the Mexican tradition of leaving it to the government to provide such community health facilities and contributed 32,000 pesos (about $6,400) for the clinic.

The story of the little girl was told to distinguished scientists when a new, finely equipped clinic was opened during the first Mexican Cancer Congress held in Guadalajara.

President Avila Camacha has asked that a National Institute of Cancer be organized in Mexico as soon as possible, Dr. Gustavo Baz, Minister of Health, announced at the congress which signalizes Mexico's declaration of war against cancer on a national scale.

An inter-American Institute of Cancer was visualized as a postwar possibility by Dr. R. R. Spencer, director of the U. S. National Cancer Institute, who was a speaker at the congress.—*Science News Letter,* November 20, 1943.



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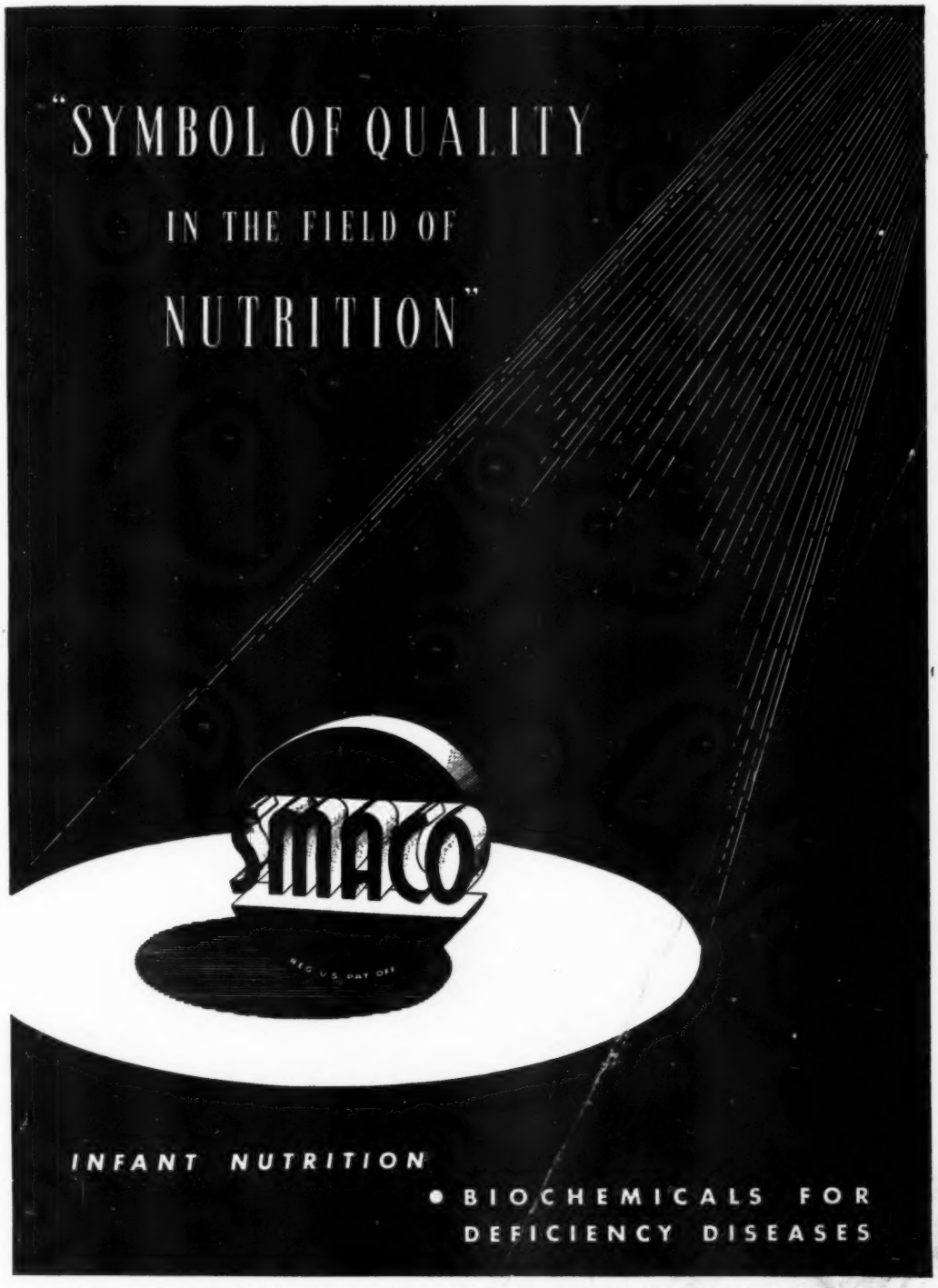

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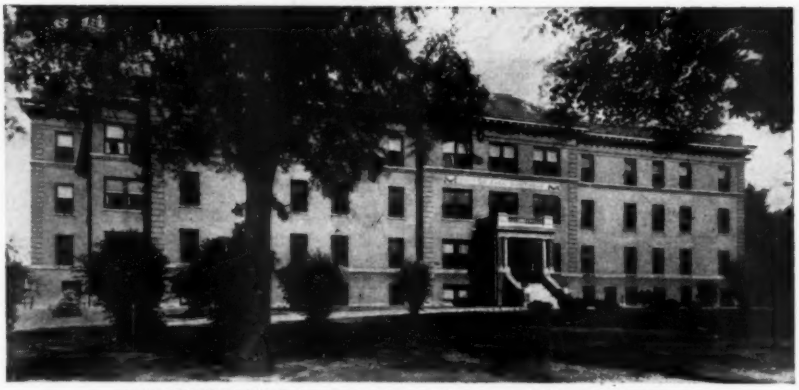

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